

# AMERICAN BUILDER

## THE WORLD'S GREATEST BUILDING PAPER

Vol. 40.

CONTENTS FOR FEBRUARY, 1926

No. 5.

COPYRIGHT, 1926, BY AMERICAN CARPENTER &amp; BUILDER CO.

Around the Family Table.....	123	Two Well Planned Homes.....	Colorplate VIII
Editorial Page .....	125	The Quinwood, a Three-Room Colonial Cottage.	
Building in Spite of Winter—Records and Forecasts— For Building Standards — Apprentice Training Needed.		The Quinault, a Well Designed Six-Room Home.	
Creating the Florida Atmosphere in the Heart of New York .....	127	Two Narrow Lot Designs.....	Colorplate IX
Christian Missionary Building to Be Highest in World .....	130	The Quinton, an Attractive Bungalow of Six Rooms.	
ART SUPPLEMENT OF NOTABLE		The Quitman, a Small Dutch Colonial Home.	
ARCHITECTURE .....	131-134	The Quarryville.....	Colorplate X
Fireproof Apartment Building, Seattle, Wash.; John A. Creutzer, Architect.		An English Design with Attached Garage—Color Sketch of Bathroom Tiled with Vitreous Glass.	
Proposed Hotel for Macon, Ga.; Ludlow & Peabody, of New York, Architects.		The Quebec .....	Colorplate XI
Christian Missionary Building, New York City; Shreve and Lamb, Architects.		A Substantial Home of Brick Construction—Color Sketch of Panelled Dining Room.	
Southwestern Bell Telephone Building, St. Louis, Mo.; Maura, Russell and Crowell, Architects.		Authentic Details for Spanish Entrances.....	Colorplate XII
This Dealer Offers a Planning and Financing Service .....	135	Photographs of Two Spanish Entrances.....	Colorplate XIII
Landscape Architecture and the Home.....	136	The Quantico .....	Colorplate XIV
The Development of Suburban Apartment Houses .....	138	Spanish Bungalow of Six Rooms—Color Sketch of Fireplace End of the Living Room.	
A Modern Garage in Classic Style.....	140	The Queenstown .....	Colorplate XV
Small Two-Family Houses.....	142	A Modernized Colonial Design Containing Six Rooms and Bath.	
Rocky Ledge, a Wayside Cafeteria and Filling Station .....	143	The Quality .....	Colorplate XVI
A New \$50,000,000 Railroad Terminal for Phila- delphia .....	145	A Brick Bungalow of Italian Design—Color Sketch of Bedroom with Dressing Alcove.	
A Business Block Development.....	146	Our Front Cover Home.....	167-171
Mexico City's Modern Buildings Safe in Spongy Soil .....	148	Photograph and Full Set of Building Plans Drawn to Eighth Inch Scale of the Beautiful Home Pic- tured in Full Colors on Our Front Cover.	
Homes in Colors.....	150	Details of Home Building.....	172
BLUE RIBBON HOMES IN COLORS.....	151-166	Detail 11—Designing the Gambrel Roof.	
The Quincy .....	Colorplate I	Save the Surface Department.....	174
An American Colonial Home—Color Sketch of Mod- ern Furniture and Draperies.		Wall Economy—Variety in Painted Brick—Ceiling Decoration.	
The Quimby.....	Colorplate II	Steel Scaffolding for Economy and Safety Insurance .....	177
Distinctive Stucco and Brick Home of Six Rooms— Color Sketch of Beautiful Finished Bathroom.		Period Design in Residential Electric Fixtures.....	178
The Queen City.....	Colorplate III	Colorful Stone Flagging for Walks, Terraces and Floors .....	180
A Delightful English Design Home—Color Sketch of Attractively Furnished Bedroom.		Good Chimneys Are Essential for Furnace Heating .....	182
Exterior and Interior Views of Gordon Fearn- ley Residence, Detroit... Colorplates IV and V		Bungalow of Matt Face Tile.....	184
The Quiver Lake.....	Colorplate VI	What's New Department.....	186-196
English Design with Attached Garage—Color Sketch of Well Furnished Sun Room.		Quick Work Building Fireproof Amusement Park Structures .....	198
The Quinlan .....	Colorplate VII	Simplifying Rafter Framing.....	201
A Small, Straight Gable Colonial Home—Color Sketch of Stairway.		Handling Oak Flooring.....	208
		How Dan Does It.....	218
		Theory of Roof Framing.....	222
		Linoleum for Every Room.....	226
		Motor Truck Department.....	230
		Advertising Index .....	317-319

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PROTECTION FOR OUR READERS—The publishers of the AMERICAN BUILDER reserve the right to decline any advertising they believe is detrimental to the interest of its readers; to edit advertising copy and to change or eliminate any statements that reflect injuriously or cast discredit upon other building products, machinery, equipment, supplies or tools.

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# 30 Days More Time!

## April 1st New Date of Issue of "Year Book of Building Designs" in connection with April Annual Number of American Builder

THE AMERICAN BUILDER Annual Reference Number and The Year Book of Building Designs will be issued April 1, 1926, instead of March, as previously announced.

We have received requests for this postponement from many manufacturers who will use large space in that number, saying they will be unable to get copy and cuts ready in time for March.

We are complying with these requests because we want to give our advertisers every opportunity to tell their story in the strongest and most convincing way to the 150,000 builders, contractors, dealers in building materials, realtors, architects and prospective home owners who will receive the Annual Reference Number and AMERICAN BUILDER Year Book.

By bringing out this great issue in April we can give our readers a better and more complete publication and one from which our advertisers will get better returns.

April is the best advertising month in the year and our Annual Reference Number and Year Book will be out just at the opening of the building season.

For our readers we are preparing a much bigger and better book. It will have a big collection of plans—about 500—not only of homes but also of garages, modern store buildings, schools, churches, theatres, apartment buildings, offices and farm buildings.

We are celebrating our twenty-first birthday in April with this biggest and best issue which the AMERICAN BUILDER or any other building publication has ever put out, and we are supplementing this with a fifty thousand edition of the 1926 Year Book in hard covers.

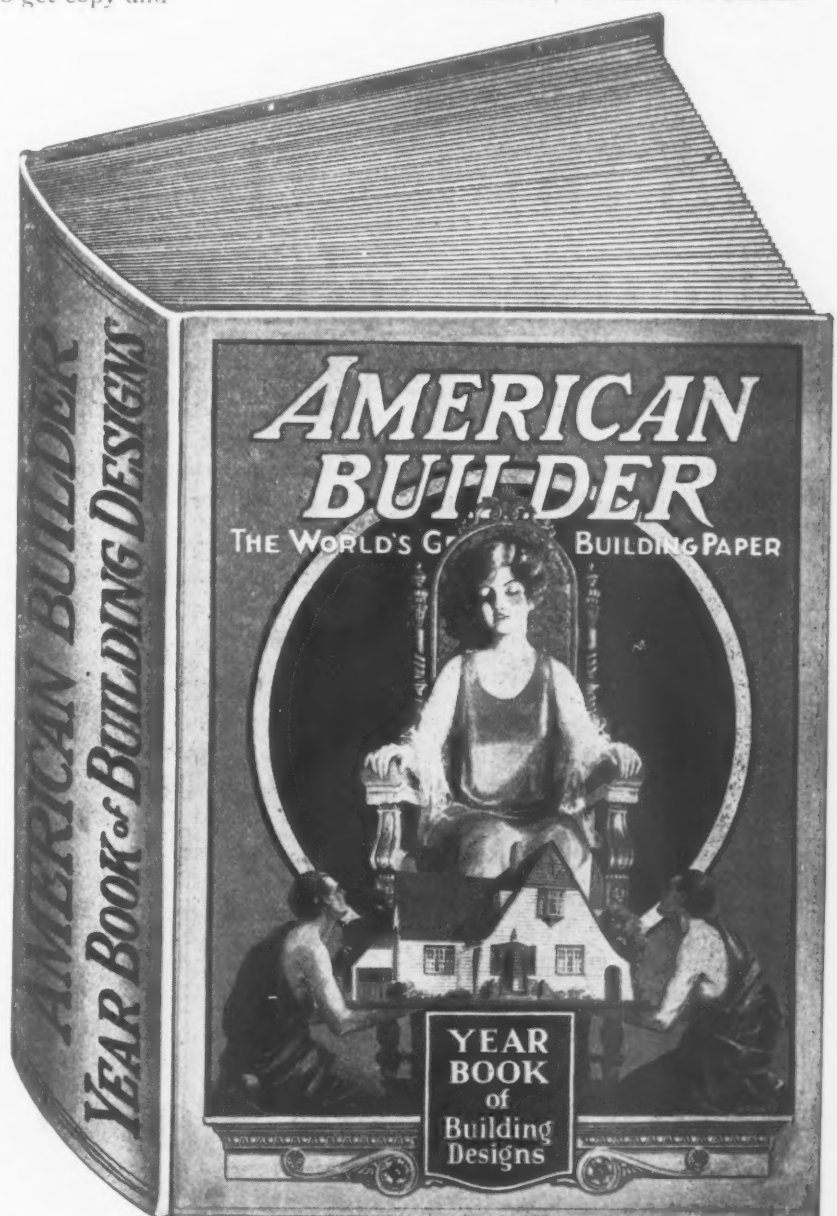
Every dealer, every contractor, every real estate builder, every architect ought to have a copy of the AMERICAN BUILDER Year Book for reference and use all through the year. We are offering these books to our readers and their friends at a very nominal price.

Some firms are ordering several copies so that their salesmen will be equipped with this big book. Some dealers are ordering for their contractor friends.

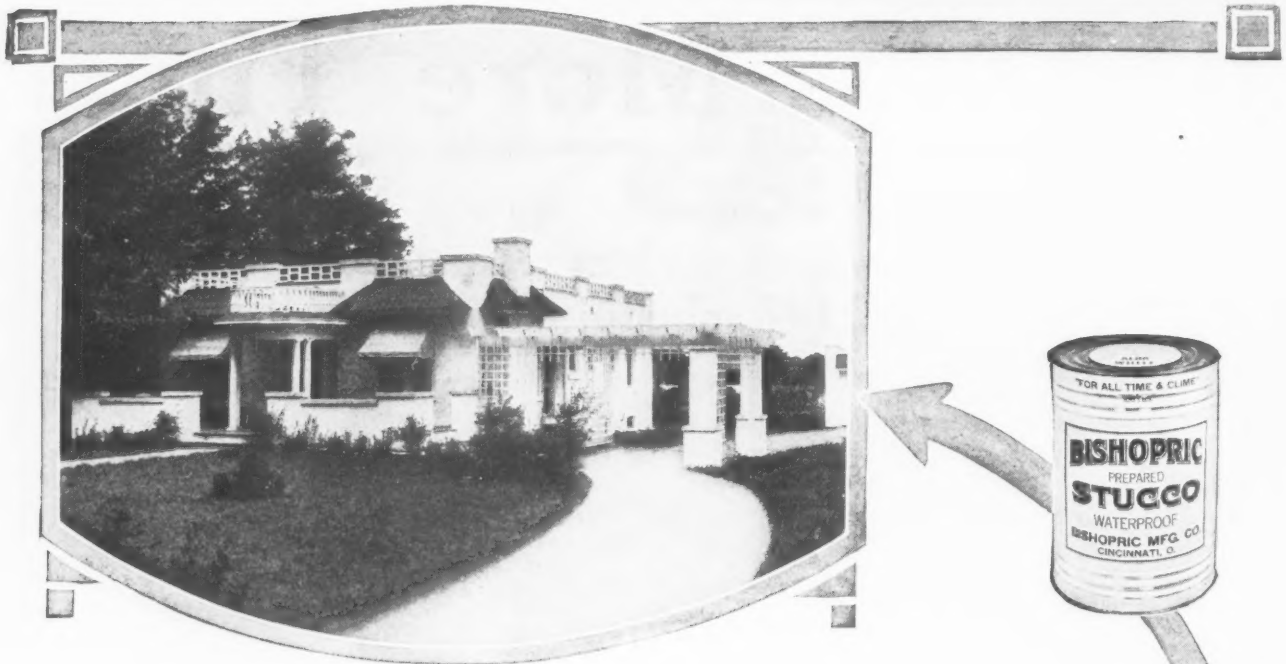
Our manufacturing order is for fifty thousand copies and they are fast being spoken for.

How many copies can YOU use?

EDITOR, AMERICAN BUILDER.



A Book of 1,300 Pages, 8 $\frac{3}{4}$  by 11 $\frac{3}{4}$  Inches, Bound in Hard Covers; Ready for Distribution April 1, 1926, to Contain 500 Designs of Homes and All Other Buildings, Also Specification and Buyers' Guide and Complete Classified Index.



# Two things that make houses sell quickly

—both provided by BISHOPRIC

Two things are necessary to make a house easily salable—beauty and sound construction.

Bishopric Stucco gives homes the warm beauty of color—color which attracts the attention and wins the admiration of prospects.

Bishopric Stucco over Bishopric Base provides a unit-construction wall of such strength and soundness as to at once gain the confidence of the prospective buyer.

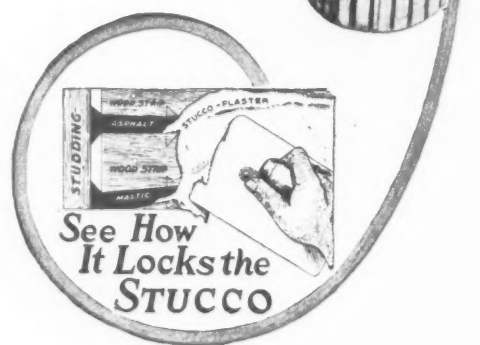
Bishopric Base locks the stucco and makes air-tight, damp-proof, vermin-proof, fire resisting walls. It has enormous tensile strength.

It provides insulation against winter's cold and summer's heat.

It is easy to demonstrate to your prospects the advantages of Bishopric unit-wall construction. It is a selling point which brings business.

Our beautiful new booklet, "The Renaissance of Colored Stucco," is just off the press. It contains the very latest ideas on the use of colored stucco in home architecture. Many colored illustrations of interesting homes. Send coupon for your copy—now.

The Bishopric Manufacturing Co.  
702 Este Avenue, Cincinnati, Ohio



Mail this coupon  
for FREE Booklet

**BISHOPRIC**  
**STUCCO** *over* **BISHOPRIC**  
**BASE**  
*"A Complete Wall Unit for all Time and Clime"*

The Bishopric Manufacturing Co.,  
702 Este Avenue, Cincinnati, Ohio

Please send me your free booklet, "The Renaissance of Colored Stucco".

Name .....

Address .....



Formerly AMERICAN CARPENTER AND BUILDER

1827 Prairie Ave., Chicago—250 Park Ave., New York City

### Building in Spite of Winter

**S**PEAKING before the New York Building Congress, Alexander B. Trowbridge, consulting architect and president of the Architectural League, said, in regard to winter construction, "Statistical records from the Geo. A. Fuller Co., covering a period of 12 years, show that the number of bad days in winter varied in the course of a year from five to 35 and the average for the 12 years was 14 days, when the conditions were too bad to work."

"Another company, the Barney Ahlers Construction Company, kept records on three jobs carried on through the winter and found that the cost increased on one of them about 5 per cent, on another 4½ per cent and on the third 6½ per cent. The building industry feels that the extra cost is justified by the certain considerations. The carrying charges on a big job are continuous and if stopped there is an expense which that might be equal to the cost of production during the winter."

### Records and Forecasts

**T**HE 1925 construction volume was not only large beyond all precedent, but it continued at a record-breaking rate right up to the end of December, according to F. W. Dodge Corporation. December building and engineering contracts in 36 states amounted to \$510,868,400, by far the highest December figure ever recorded. There was an increase of 10 percent over November, which is quite unusual, and an increase of 45 per cent over December, 1924.

The total construction started in these 36 states during the year 1925 amounted to \$5,821,068,400, an increase of 30 per cent over 1924, which was itself a record year. A conservative estimate of last year's construction over the entire country would be \$6,600,000,000, compared with \$5,237,000,000 for 1924, a 26 per cent increase.

Last year's total for the 36 states included the following important items: \$2,671,818,400, or 44 per cent of all construction, for residential buildings; \$885,732,000, or 15 per cent, for public works and utilities; \$835,673,400, or 14 per cent, for commercial buildings; \$462,741,200, or 8 per cent, for industrial and electric power plants; and \$413,203,700, or 7 per cent, for educational buildings. Residential buildings increased 30 per cent over 1924; public works and utilities increased 22 per cent; commercial buildings increased 41 per cent; industrial work increased 31 per cent; and educational buildings increased 12 per cent. The most spectacular increase was 98 per cent in social and recreational buildings which amounted to \$243,326,300 in 1925.

Contemplated new work reported for these states for the year 1925 amounted to \$8,826,152,100, this being 52 per cent in excess of the amount of construction actually started. This large excess indicates a continuing heavy construction demand carried over into the new year.

The year 1926 opens with construction continuing at a record rate and practically no indication yet in sight of any slowing down within the next few months. Should there be any slowing down during 1926 it does not seem likely to

occur until after the spring season has passed. Some observers look for a reaction some time in 1926, while others anticipate an even greater volume than in 1925. Even the most conservative business men will expect a very large building volume, particularly during the first half year.

### For Building Standards

**A** STANDARD of building, arrived at from a new approach, is the object of the National Conference Committee on Better Building, recently authorized by the board of directors of the National Association of Real Estate Boards. This new approach is neither solely a minimum standard of safety nor entirely an architectural standard but a combination of standards looking toward the protection of the home buyer and the investor equally.

Our representative of the national real estate body is to be appointed on this committee and the secretary of the association is to be the secretary-treasurer. Several interested organizations are to be invited to appoint one representative each upon the committee.

The purposes are to prepare construction and housing standards by means of which structures may be classified and to formulate these standards into a report to be submitted to the organizations and institutions represented and to suggest to organizations and institutions represented the practical means by which the standards can be made applicable in the financing, buying and selling and construction of real estate improvements.

### Apprentice Training Needed

**A**CCORDING to a report issued by the U. S. Department of Labor, 307,522 male immigrants were admitted to this country during the fiscal year ended June 30, 1925. Of this number 12,305 were carpenters; 2,550 were painters and glaziers; 1,197 were plumbers; 3,276 were masons; 521 were stone cutters and 512 were sheet metal workers; 83,552 common laborers. Figures are not available showing a classification of the persons leaving the country during the year, but in all probability the net gain of immigration over emigration in the trades mentioned is almost negligible. This is another strong argument in favor of apprentice training in the construction industry.

### A Professorship of Plumbing

**M**UCH comment has been called forth by the establishment, at the Carnegie Institute of Technology, of the Theodore Ahrens professorship in plumbing, heating and ventilating. "The idea of a chair of plumbing strikes us oddly at first," remarks the Pittsburgh Post, "accustomed as we are to associating university professorships with pure science and the liberal arts. But this is a practical age and an age of specialization and it can be predicted that the new chair will be as productive of good as many of the chairs in the older academic subjects."



# "Our fleet of 80 trucks is now 100% Autocar"



*This model KA 3-ton Autocar is one of 80 Autocars owned by the Mason Companies, of Philadelphia and vicinity*

Mr. J. W. Mason, President of the Mason Companies, of Philadelphia, has had a long experience with Autocars. He expresses his satisfaction as follows:

"About ten years ago we bought our first Autocar. Our fleet of 80 trucks is now 100% Autocar.

"Needless to say, we are more than satisfied with our experience with Autocars. Their operating expense has been low and their balanced load distribution makes them ideal trucks for the lumber and building material business."

## The Autocar Company, Ardmore, Pa.

ESTABLISHED 1897

Direct Factory "Autocar Sales and Service" Branches or Affiliated Representatives in

*Albany	*Buffalo	Denver	*Los Angeles	Orlando	*San Diego	Tampa
*Allentown	*Camden	*Detroit	*Memphis	*Paterson	*San Francisco	Trenton
*Altoona	*Canton, O.	*Erie	*Miami	*Philadelphia	*San Jose	*Washington
*Atlanta	*Charlotte	*Fall River	*Newark	*Pittsburgh	*Schenectady	West Palm Beach
*Atlantic City	*Chester	*Fresno	*New Bedford	*Providence	Scranton	*Wheeling
*Baltimore	*Chicago	*Indianapolis	*New Haven	*Reading	Shamokin	Wilkes-Barre
*Binghamton	*Cleveland	*Jacksonville	*New York	*Richmond	*Springfield	Williamsport
*Boston	*Columbus	*Jersey City	*Norfolk	*Rochester	*St. Louis	*Wilmington
*Bronx	*Dallas	*Lawrence	*Oakland	*Sacramento	*Stockton	*Worcester
*Brooklyn					*Syracuse	York

\* Indicates Direct Factory Branch

# Autocar

gas and electric trucks

EITHER OR BOTH - AS YOUR WORK REQUIRES

# Creating the Florida Atmosphere in the Heart of New York

**I**F the atmosphere of Florida sells real estate, why not move some of that atmosphere to New York City and sell Florida property off the map and under the real atmosphere on Forty-second Street and Broadway, reasoned the officers of the Coral Gables Corporation.

And, therefore, one evening last May, Forty-second Street blinked, rubbed its eyes and saw a Spanish patio, or court, comfortably set in between a theatre and an office building. It was a real patio, colorfully decorated and illuminated with wrought iron lamps which were suspended from a balcony and which threw a soft light on the quaintly blended stucco walls.

Florida had arrived in New York and throngs of people visited the picturesque combination of Spanish, Moorish and Italian architecture which comprised the eastern offices of the Coral Gables Corporation.

These unique offices were opened to advertise Coral Gables property and to sell real estate to customers who had been interested by means of the unique sales stunt.

The company started by taking a seven years lease on the first three floors at 140 West Forty-second Street, which is just about 200 feet from the corner of Broadway and Forty-second Street. The building is just outside of the famous Metropolitan Theatre district and directly in the center of the city's up-town business district. Perhaps more people pass in front of the building than walk along any other street in the world.

The entire first three floors of the building were rebuilt and redecorated in the Spanish style that is typical of Florida. The remarkable part of this construction work was the way it left the remainder of the office building untouched. During the renovation of the first three floors, in which the entire style of the architecture was altered, the upper floors of the building were uninterruptedly occupied for office purposes and today, with the work completed, we have the peculiar spectacle of a small Spanish type building from the roof of which sprouts a large American skyscraper.

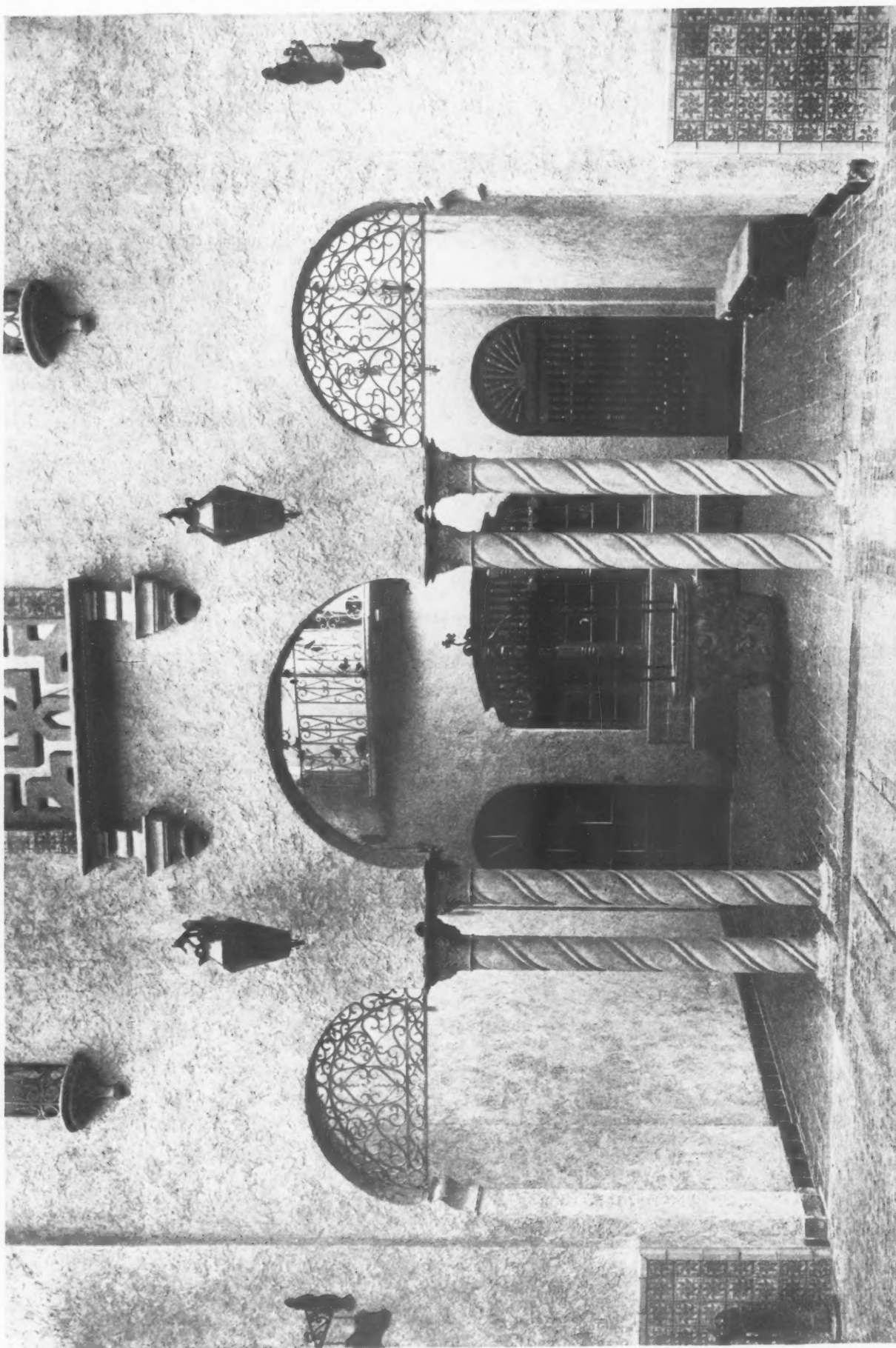
But the effect is not as ugly as it sounds. If instead of facing the other side of Forty-second Street, the building faced an open park from the other side of which it could be seen in its entirety, it would appear to be a frightful monstrosity. But, as it is, the entire elevation of the building can be seen only from the other side of the street, and from that point of vantage one naturally looks only at the lower floors and their Spanish effect and not at the tall office building on top of them.

The alterations cost over forty thousand dollars according to the officers of the Coral Gables Company and in addition they have more than twenty thousand dollars worth of Spanish antiques on display to lend an authentic air to the architectural design of the office.

The seven years lease and the extensive alterations have a great publicity value in that they suggest to the public



The Spanish Style, Characteristic of All Coral Gables Construction, Is Carried Out All Through the New York Office of This Company. A large plat of the project may be seen on the wall above the desks and many views of Coral Gables are hung throughout the suite.



One Would Hardly Expect to Find Such a Truly Spanish Patio on One of the World's Busiest Metropolitan Thoroughfares and Yet This Entrance to the New York City Office of the Coral Gables Corporation May Be Seen at 140 W. Forty-second Street, Just About 200 Feet from Broadway.



that the company is a permanent institution in which they can place their confidence and that it is not a "fly-by-night" organization. The unique character of the office attracts attention; its permanence is a continual advertisement and an indication of solidity, which will create a favorable impression of Coral Gables in the minds of many New Yorkers, even if they do not enter the offices of the company. And such favorable impressions eventually produce sales, which are, after all, the real reason for this unique New York office.

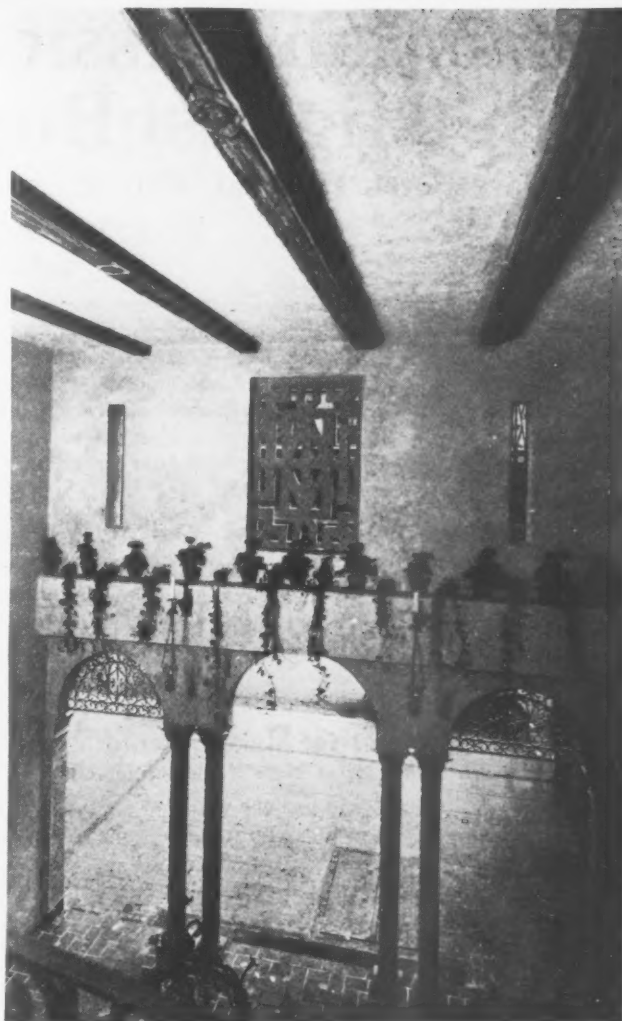
The announcement of the company states that the New York office of Coral Gables "was opened to render service to persons and concerns seeking information about the peninsular state. For this purpose, Walter W. Burns, authority on Florida and associated with Coral Gables, will lecture from time to time." But in spite of this information service, the New York office staff never loses sight of its main purpose—the boosting of Coral Gables and everything is arranged to make the visitor sense the beauty and possibilities of this Miami suburb. Coral Gables literature is distributed and from the walls hang many attractive views of the suburb.

The first few weeks immediately following the opening of the New York offices were devoted to publicity. Jan Garber's Coral Gables Orchestra entertained visitors; refreshments were served and every attempt was made to interest New Yorkers and advise them of the presence of the Coral Gables Corporation in their city. During this period no attempt was made to sell and the actual function of the office was, for the time being, placed in the background.

More recently the company has engaged in a selling campaign in the city and V. A. Bradbury, New York City sales manager and in charge of the New York office, reports that the results have far out-reached the most optimistic expectations.

"If we had merely been interested in immediate sales," says Mr. Bradbury, "we should never have opened in May with the long hot summer months ahead of us. But we wanted to introduce Coral Gables to the public and we were willing to wait until November for actual results—but, as things have turned out, it was not necessary for us to wait. A large number of persons are buying right here and now, off the map. I am well satisfied with the publicity value of these offices."

Mr. Bradbury believes that most people who are buying



The Patio Entrance to the Coral Gables Office as Viewed from the Balcony Within.

Florida property in New York City are buying for speculation, but he also admits his astonishment at the large number of sales made to persons who are buying in order to build winter homes for themselves.

"About forty-five per cent are buying property to build and this is a development which was entirely unexpected by us. Of course, in Florida, we expect people to buy to build, but here the matter stands differently and we are gratified to find that so many people intend to make their homes in Florida—at least for part of the year."



### Record Lumber Production

ACCORDING to the totals of weekly softwood reports made to the National Lumber Manufacturers' Association by approximately 350 of the larger mills, the lumber production of the United States was slightly larger in 1925 than for any year since 1916. These mills reported a production of 12,428,809,277 feet, slightly more than for 1923, hitherto the peak year since the beginning of the World War. Applying the accepted ratio of production between the reporting and the non-reporting mills, it is calculated that the total production has been between 37,000,000,000 and 38,000,000,000 feet.



Furnishings Are in Harmony with the Spanish Architecture and More Than \$20,000 Worth of Spanish Antiques Are on Display in This Most Unusual of Real Estate Offices.

# Christian Missionary Building to Be Highest Building in World

To Have Hotel, Hospital, Church, Auditorium and Missionary Bank Features

By **BERNARD L. JOHNSON**  
*Editor, American Builder*

**S**EEMINGLY, architects and engineers are not easily daunted by the constantly increasing size and height of record-breaking buildings. The limit of height for steel frame buildings is, as yet, unknown and, quite likely is above the 100-story level. The perspective of Shreve and Lamb which shows the projected Christian Missionary Building to be higher than the Woolworth Tower is a feature of our perspectives this month.

## **Fireproof Apartment Building, Seattle, Wash.** **John A. Creutzer, Architect**

This eight-story and basement apartment house building is to be of fireproof construction faced with pressed brick and trimmed with terra cotta. The building contains sixty-five (65) two, three and four-room apartments equipped with the latest modern equipment.

## **Proposed Hotel for Macon, Georgia** **Ludlow & Peabody, of New York, Architects**

Macon, Georgia, will erect a \$1,000,000 community tourist hotel, having just closed a financing program for the junior securities, directed by the Hockenbury System, Inc., of Harrisburg, Pa.

The hotel, designed tentatively by Ludlow & Peabody, of New York, will be a seven-story fireproof structure, so built that eventually it may double its capacity of 200 guest rooms, should the patronage warrant. There will also be many corner suites of two, three or four rooms each, elegantly furnished, for semi-permanent residents there will be bowling alleys, billiard room, and a ball room and auditorium with a capacity of 300.

The property, two and one-half miles from the city and easily reached by motor, contains 470 acres, with ample room for an 18-hole golf course, tennis courts, bridle trails, formal and sunken gardens, and, in addition, restricted home sites of more than 100 acres, for a winter colony. The site commands an unobstructed view of the beautiful hills and valleys of Bibb County, overlooking the city.

On the Dixie, National and Lee highways, and with an equable climate, in the heart of the peach country, the increasing number of winter visitors to Macon from the North made the need for a new hotel acute.

The Highlands Hotel Company is the corporation which will control the operation of the hotel. P. L. Hay was general chairman of the stock sales program, and C. Baxter Jones, attorney-at-law, was general sales manager.

The Chamber of Commerce fostered the movement, with the Rotary, Kiwanis, Civitan, Lions, Exchange and other clubs co-operating.

The hotel company has a signed proposal from the Griner Hotels, Incorporated, of Jacksonville, Fla., to operate the hotel.

## **Christian Missionary Building, New York City** **Shreve and Lam, Architects**

The Christian Missionary Building, of New York, will soon wrest from the Woolworth Building the title of New York's tallest, according to present plans. The new building will have 65 stories as against the Woolworth's 58—and it will top the latter by 8 feet. It will tower 800 feet above the street. Ground for the building was broken early in

January, the financing efforts to raise \$600,000 having succeeded. Mr. Oscar E. Konkle, owner of the site, and president of Realty Sureties, Inc., holds and operates already 11 apartment houses in Manhattan and the Bronx, with a total valuation, it is said, of close to \$5,000,000. Shreve and Lamb, architects, of 331 Madison Avenue, are drawing the plans.

The new building, it is estimated, will cost \$14,000,000, exclusive of the land. It will be an apartment hotel and church, containing not only 4,500 bedrooms, and a dining room seating 2,000, but also an interdenominational church, a bank for missionaries, stores, a hospital, and 12 roof gardens.

It will face 201.10 feet on the east side of Broadway, on the block between 122d and 123d streets, and extend back 250 feet on 122d Street and 225 feet on 123d Street. Inside the structure, according to plans, will be generated power for electric lights, refrigeration, and 30 elevators; and the building will be heated with fuel supplied from huge tanks in a sub-basement two stories below the street level. The sub-basement is also to contain a laundry, trunk rooms, a gymnasium and a swimming pool.

On the main floor, commencing on 123d Street, will be the three-story auditorium to be used for the undenominational church service, and Sunday School and educational lectures; it will be equipped with moving picture installations for projecting Biblical and educational pictures. Next to the auditorium on the main floor will be a store, and a hotel entrance.

On 122d Street, the plan is to have a new national bank to be known as the Missionary National Bank, which is to act as a clearing house for the accounts of missionaries all over the world.

The rest of the main floor is to be given over to the dining room, to vault spaces, hotel offices and a hotel lobby.

The floors from the fourth to the sixty-fourth will be given over to bedrooms and baths. Each floor will have its reception rooms. The sixty-fifth floor will contain the hospital with rooms for a complete staff, and a separate kitchen. On the roof will be a large radio receiving and broadcasting station, with connections in each room.

The space left by the setbacks demanded by the zoning laws of New York will be utilized for the 12 roof gardens.

## **Southwestern Bell Telephone Building,** **St. Louis, Mo.**

**Mauran, Russell and Crowell, Architects**

The architecture of this fine building is unique in its combination of set-back and light court arrangement designed in such a way as to relieve its great mass and combining grace and symmetry with the least light obstruction. It is said to offer less light obstruction than a straight up and down building of 19 stories. It is 26 stories, 357 feet in height; contains a total floor area of 965,000 square feet and a grand mass of 11,967,000 cubic feet. It is designed to meet the telephone company's requirements in that section of St. Louis for at least 25 years. The lower floors are occupied by telephone exchanges and their complicated mechanism and above that are provided office accommodation for telephone officials of the entire district. The building will be faced with Indiana limestone.

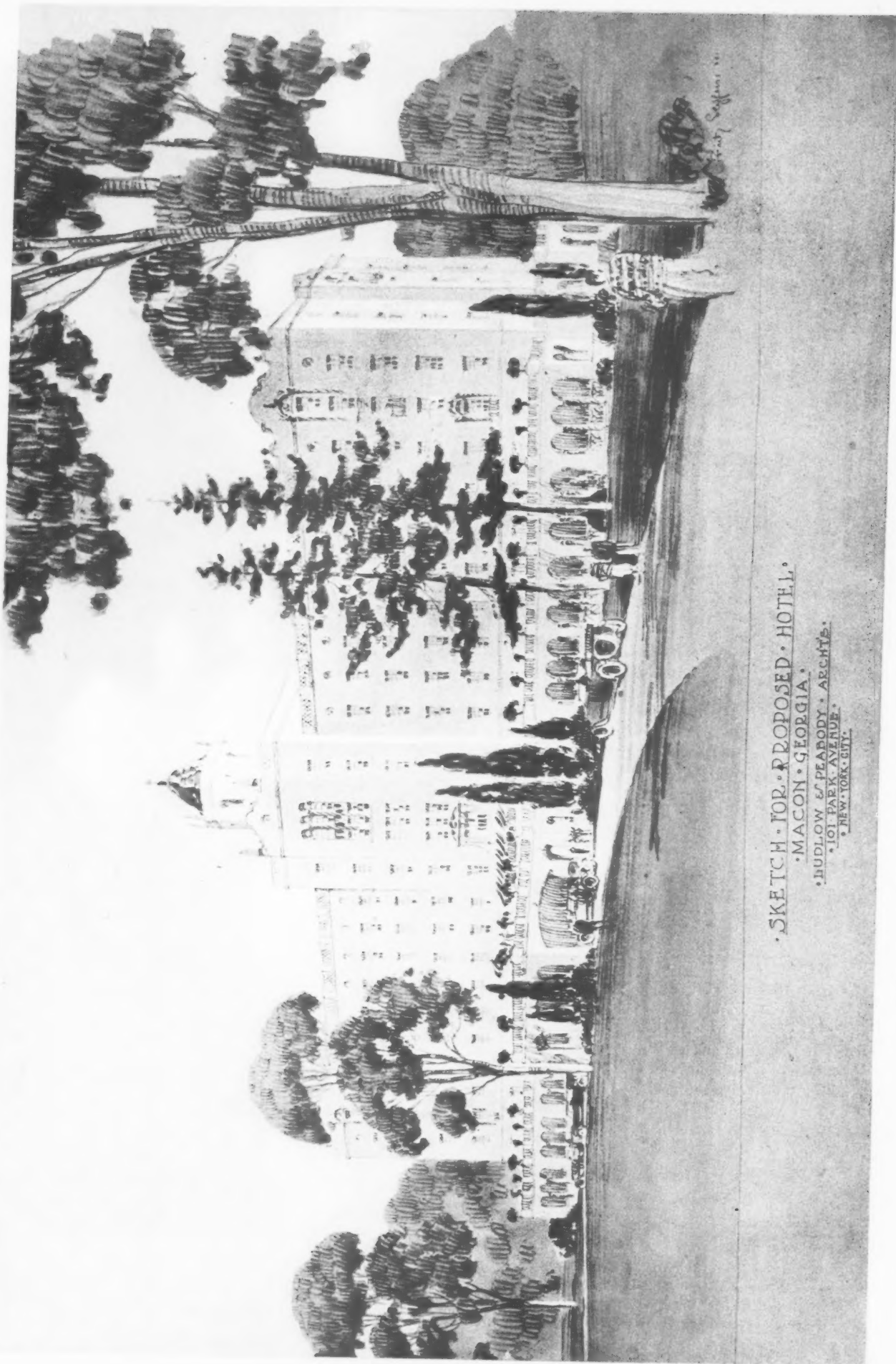
# ART SUPPLEMENT *of* NOTABLE ARCHITECTURE



PLATE 69

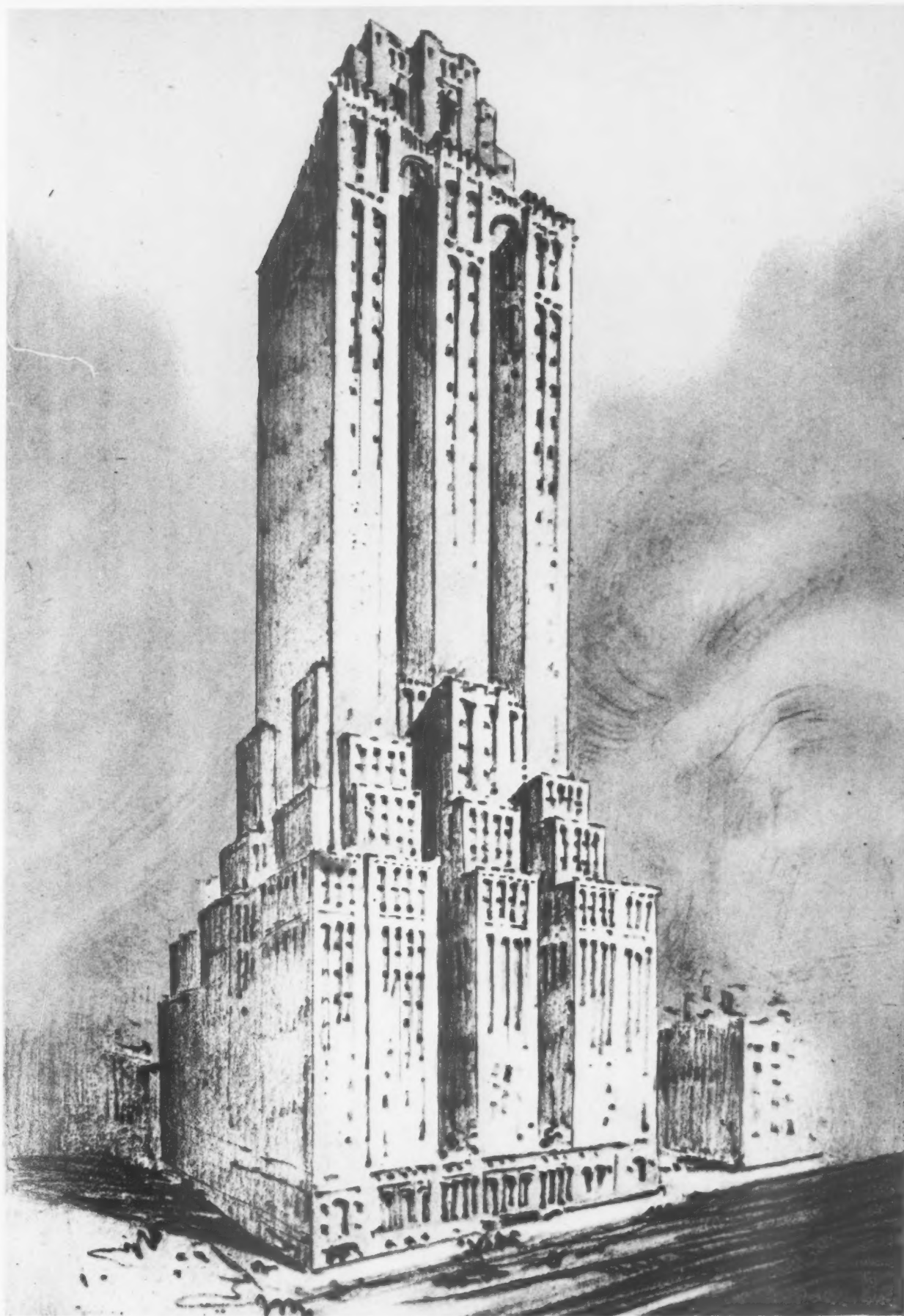
FIREPROOF APARTMENT BUILDING, East Olive and Belmont Ave.,  
Seattle, Wash.; John A. Creutzer, Architect.





• SKETCH FOR PROPOSED HOTEL •  
• MACON • GEORGIA •  
• LUDLOW & PEABODY • ARCHTS •  
• 101 PARK AVENUE •  
• NEW YORK CITY •

PROPOSED HOTEL for Macon, Georgia; Ludlow & Peabody,  
of New York City, Architects.



*The CHRISTIAN MISSIONARY BUILDING, Broadway and 122nd Street, New York;  
Shreve & Lamb, Architects. It will be 800 feet, sixty-five stories high.*

PLATE 71

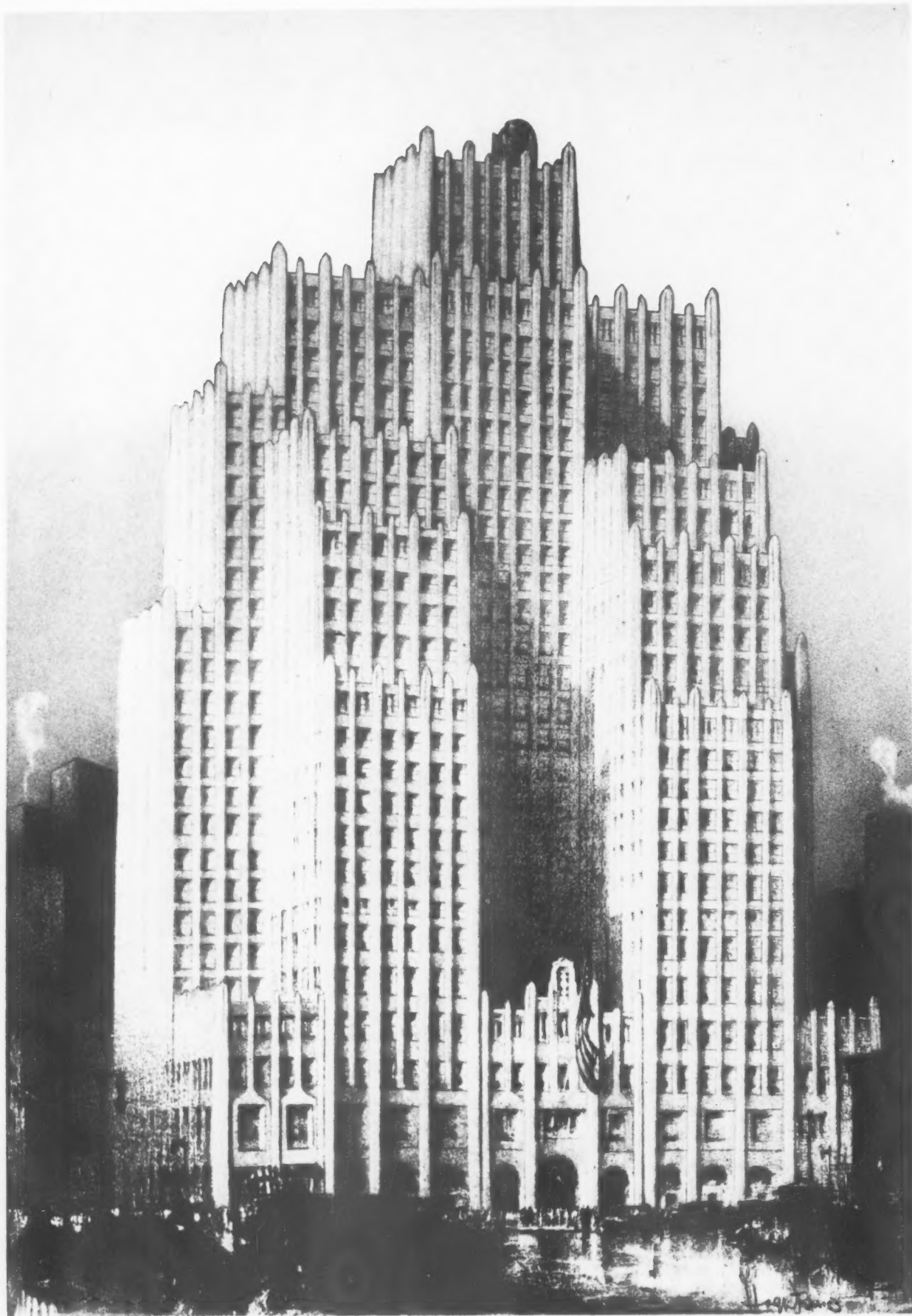


PLATE 72

*The SOUTHWESTERN BELL TELEPHONE BUILDING, St. Louis, Mo.;*  
Mauran, Russell & Crowell, Architects.



# This Dealer Offers a Planning and Financing Service

"IF we can help others to own and enjoy their homes, we have contributed in some measure to better citizenship and a finer community, Syracuse, of which we are most proud."

That is the ideal on which George M. Wilson has built, in the last ten years, a building supply business of enviable proportions and contributed a conspicuous share to the development of the city of Syracuse, N. Y. Ten years ago the Wilson & Greene Lumber Company was organized and Mr. Wilson was elected president. He has guided his company through a well balanced development until today the annual sales amount to \$1,250,000.

The policy of the company has always been to stock and sell a complete line of lumber and building materials and equipment, including paint and varnish, plumbing supplies, lighting fixtures, hardware, electrical supplies, plate glass and many specialty products. But beyond this the Wilson & Greene Lumber Company carries in stock another commodity, which has gone even further than its complete stock of materials to advance the business of the company. This commodity is service to the prospective builder and is handled by a home financing department and a plan service department.

The first of these is under the management of Mr. J. L. Debes, who is also office manager, and it offers advice and aid in planning the financing of new homes, under a five year plan. Speaking of this work Mr. Debes says: "When a man comes to us he probably knows whether or not he can afford to build a home, but that is not all of the problem of financing a new house. We endeavor to assist him with facts and figures which will enable him to build a home within his means."

"We are interested in his age, family, ability in his chosen work and his character. We are not only interested in building a home for him, but also in giving him a square deal and seeing to it that he gets the best possible within his ability to pay. We can trace much of our reputation and success to the ideal of a square deal. In the first ten months of 1925 we have financed home builders to the extent of about a quarter of a million dollars."

"We also assist in financing contractors, builders and carpenters. So far this year we have financed this group to the extent of half a million dollars. Our books show that we have about 500 accounts of builders, contractors and carpenters."

The Plan Service Department is directed by Mr. C. O. Magenheimer and its work is carried out in the most

complete detail. It includes not only the design of the proposed home but also draws up complete working drawings of all plumbing, heating and electrical equipment in their relation to the proposed building and specifies what type of supplies and equipment are to be used.

The field of this company is not limited to the building of small homes, however. Among its friends are numbered

many architects who seek consultation on projects for the building of schools, churches, banks, theaters, stores and municipal buildings. An example is seen in the Ambassador Apartments, on the corner of University Avenue and Madison Street, Syracuse. This building, costing \$150,000 and containing 28 small apartments, was financed by the Wilson & Greene Lumber Co.

Each department of this company is under the direction of a specialist and this applies all along the line from Mr. O. H. Greene, the treasurer, and Mr. J. W. Beynon, the secretary, who is an expert on lumber and building supplies, to the various foremen who direct the actual work. This is a point of vital importance in a large organization and the size of the Wilson & Greene organization is evident in the fact that there are 125 persons on its payroll. More than 500 carloads of lumber and building materials and equipment are received by it every year. Eight motor trucks and 24 horses are kept constantly busy making deliveries.

The physical equipment of this company is also extensive and of an equally high quality. The yards consist of 17 lumber alleys and the large mill is constructed with a trussed roof to eliminate posts and afford greater space and freedom of action. There are also a paint and varnish store and a hardware, plate glass and mirror store. Each machine, in the mill, is operated by an individual motor and a total of 900 horsepower is used. These motors are of all sizes ranging from ½ horsepower to 75 horsepower. Eighty per cent of all lumber and supplies are under cover. Double tracks, connecting with the Lackawanna and the New York Central Railroads, run directly into the yards and there is a siding into the warehouse. These provide ample transportation facilities. All unloading is done by gravity and rollers or a heavy crane with traveling carriage.

Although these present quarters seem large, covering 7½ acres of ground, with a branch located at Cortland, N. Y., the rapid expansion of this company's business requires a similar physical expansion and a new office building is being planned. This addition will include a general display room, a store and the architectural and drafting departments.



**George M. Wilson, President and Active Head of the Wilson & Greene Lumber Company, of Syracuse, N. Y., Has Established a Noteworthy Service Policy.**



## LANDSCAPE ARCHITECTURE AND THE HOME

A DEPARTMENT  
CONDUCTED BY

F.A.CUSHING SMITH  
LANDSCAPE ARCHITECT  
CHICAGO



# A Colonial Garden

By F. A. CUSHING SMITH, Landscape Architect

IN the sections of this country where the Colonial style of architecture is adapted to the topography, to the climatic conditions, and to the living conditions of the people, there is no more satisfying, no more restful style for the average small home. The very simplicity of the elevations, with the modest ornamentation about the entrance doorway makes the style attractive. When the entrance is at the center of the front, there is an appealing balance and symmetry about the facade which is not often sought or even found in other styles. You can well imagine the living room to the right of this quaint entrance, the dining room to the left, and in the center the long hall, lighted by the fan-shaped windows over the doorways at either end.

The dining room to the east looks out upon a simple perennial border, and from the living room windows we catch a glimpse of the rose garden to the west, over which the rays of the setting sun softly glow.

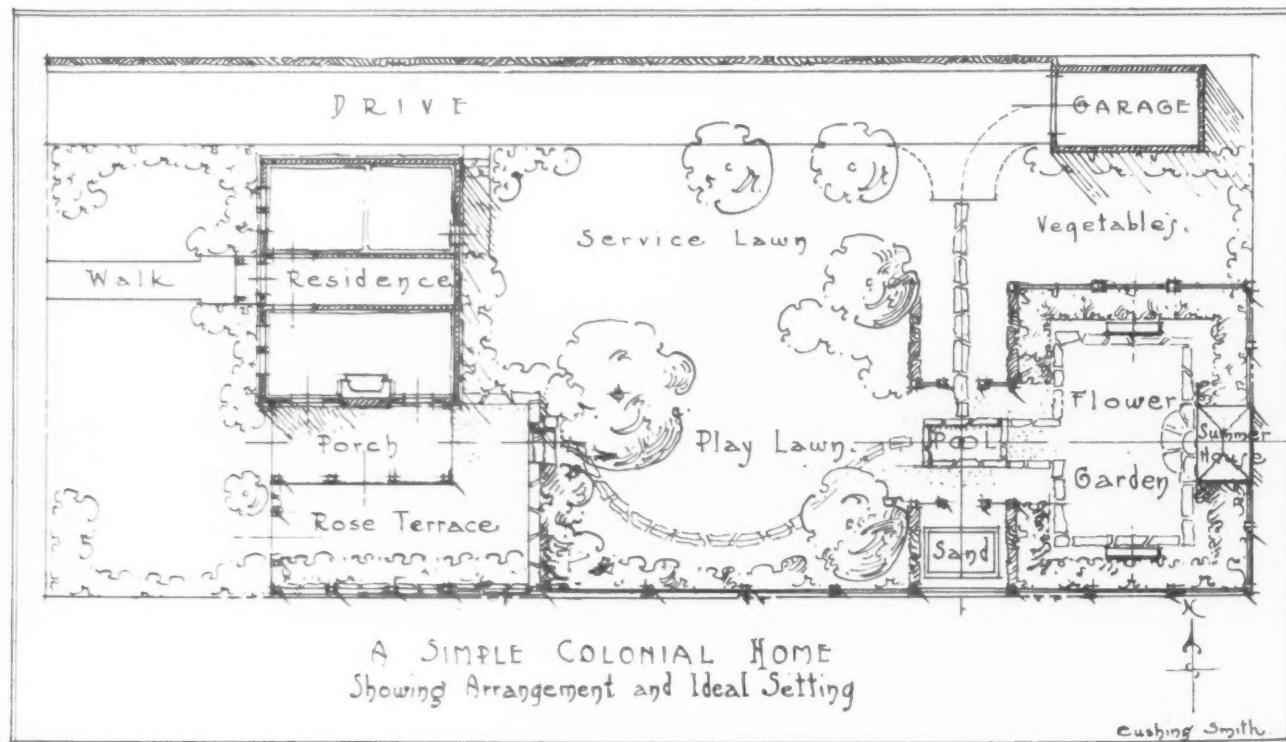
From the hallway to the north we wander across a carefully tended greensward to the shrub borders at either side, in which the old-fashioned perennials bravely smile amongst the over-hanging shrub branches. A fine old cherry tree prevents having our flower garden near the living room, and this time we must be content with a location toward the back of the lot, where the sun brings out

the blossoms, and where the ravenous roots of the tall elm do not rush into the flower borders, devouring plant food, and depleting the area of water.

We all love the shallow pool near which the comfortable seat offers repose from the heat of the day, and in which the darting gold fish shimmer as the sun flecks the water with splashes of light. About this pool we have chosen to plant the water-loving plants and shrubs for they will add to the attractiveness of the corner, and will respond to the damp soil conditions.

In the flower garden to the back of the lot, enclosed in a high lattice fence, we have massed the flowers toward the outside, keeping the central turf panel free from any encroachment. To insure reaching the flowers for cutting, just after a rain, let us place the slate or weathered stepping stones where they will be inconspicuous, yet useful.

No enclosed garden would be complete without a shelter for repose, and like the house this little building retains the simple Colonial characteristics of the period. Seats are provided on the three sides of the summer house, and the rear seat opens to disclose a spot for harboring the wandering tools, when the weeding and cultivation of our garden has been completed. In the center of the ceiling of this little house hangs a lantern of wrought-iron which, on a summer's evening sheds enough light to allow a homey



supper on the terrace in front. One of the old summer houses on the estate of the Derby family was a structure of two stories in height. A rambling stairway led to the second story, with windows all about, from which a fine view of the entire garden and of the house could be secured. On moonlight nights what more romantic spot could be found.

Without children, no garden is complete. For their very own use and sole enjoyment, we are to have a teeter, and a sand-box, with wide side rails, where Tom may spend many a happy hour. Where a pool and perhaps a swing are also an adjunct of the lot plan, remember that the play space, and especially the pool must be located at some point which can be easily seen from the house. Thus when the children are not under the eyes of a maid they can be watched and serious accidents avoided.

Unless you are a very great garden enthusiast keep the size of the vegetable garden small, not over 15 by 20 feet. Remember that it is easy to start a garden, but not many can surmount the difficulties which later make weeding, watering, cultivation and spraying a necessary and trying part of the success of the undertaking. Let us be sure to have a few fruit trees on this small Colonial place of ours, and their selection will be largely determined by the soil and climatic conditions of the section of the country in which we are to build. Apples, pears, cherries and perhaps a plum or two will give us ample supplies when the trees mature.

To make of the interior furnishing of the Colonial home a perfect replica of days gone by requires much study, and may take years of patient effort. Good examples of modern built Colonial period furniture can now be secured at reasonable prices. While the wood may not appear to so great an advantage compared to the old slightly damaged and worn antique, yet in a new house, which is finished entirely contrary to olden styles, such refinished furniture looks at times a little out of place.

In the furnishing of the grounds the same care should be taken to include so far as possible the old-fashioned shrubs, perennials, annuals and vines which graced the early Colonial gardens. To assist in such a selection, we can take courage in the few varieties mentioned here. It is not so much a question of securing many different kinds, as to



**In Furnishing the Grounds of the Colonial House Care Should Be Taken to Include, so Far as Possible, the Old-Fashioned Shrubs, Perennials, Annuals and Vines Which Graced the Early Colonial Gardens.**

find among the varieties colors and heights which best blend together to make a harmonious whole.

At either side of the entrance walk, we might have the rose of Sharon, or Althea. When the house is painted white with wide clapboards and green blinds, the odd colors and color combinations of this splendid old standby will only be enhanced in such a position.

In the Dutch garden of the Van Cortland family at Croton-on-Hudson, New York, outside of the manor house built in 1681, we still find the charming flowers of that far-away day—the rose, the flowering almond, with peonies, tulips, narcissus and harebell. All of these flowers might be planted in front of the rose of Sharon, near the entrance and along the entire front facade of our Colonial home.

For variety about the shrub borders, and as enclosures for the garden to the rear, we can select many varieties of lilacs. Those of us who may live in New England can find many old gardens in which the box-wood hedges are still thriving. In the northern states of the Middle West the box-wood will not grow, due to the severe winters, and sudden changes in temperature. None of the broad-leaved evergreens such as the rhododendron, azalea, mountain laurel and others of that group which were always so popular long ago, will thrive.

The latter group of evergreens we cannot fail to enjoy where the soil or climatic conditions are proper and conducive to their growth. There is no more alluring sight than a flame azalea covered slope, nor a more brilliant display of color than the rhododendrons' reflected colors in the smooth surface of a small lake or winding stream.

In a list of flower seeds published long ago in a Boston paper we find the names of the Indian pink, the lemon marigold, sensitive plants, lobelia, larkspur, snap dragon, white chrysanthemum, marigold, lupine, coxcombs, hollyhock, thyme, sweet William, columbine, poppies and Canterbury bells. Such a list would provide a long succession of bloom from the earliest spring days until the frosts of winter destroyed the beauties of the chrysanthemums and coxcombs.

Among the shrubs about the front door yard we can be assured of beauty and color if we plant the lilac, the syringa, the flowering currants, strawberry bush, the snowberry and its brother the Indian currant with their arching heavy-laden branches. The snowball sometimes shaded the gate, and the flowering almonds always bring fragrance to the border. Let us plant a few peonies in among the shrubs or perhaps line the long winding entrance walk with these hardy old favorites, whose hardiness, freedom from scale or disease, makes them always trim and neat.



**The Entrance to a Wild Flower Garden. Such a garden is always appropriate for the Colonial Home.**



# The Development of Suburban Apartment Houses



The Cathedral Apartments, Hempstead, L. I., an Example of the Type of Suburban Apartment Which Is Achieving Much Popularity in the Vicinity of New York City Because It Offers All the Convenience of the City Apartment Together with the Advantages of the Country.

**N**O grass to cut in the summer, no furnace to attend in the winter, but plenty of well-kept gardens and fine warm rooms to enjoy. To the average suburbanite and especially to those whose difficulties furnish material for comic strip artists, that statement describes heaven.

As a matter of fact, all it really means is that apartment houses are being built in the suburbs.

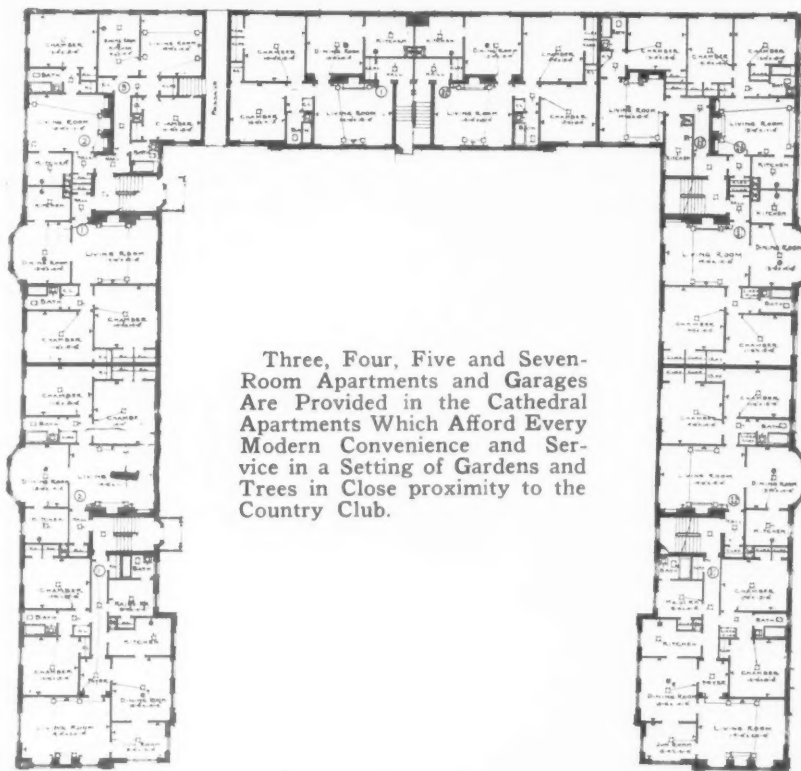
The down-to-Florida boom has been holding the attention of many people interested in building activities and so they have not noticed the towns of apartment houses which are springing up in the suburbs. Three years, and even two years ago, a suburban apartment house was still unusual. In the spring of 1925 apartments for thousands of families were ready for occupancy.

New Yorkers are taking to the suburban apartment like the average duck to water. To men and women who have always lived in city apartments, where the superintendent could be called whenever a knob came off a door or when a small plumbing stoppage occurred, the joys of suburban living have not seemed very great. Friends have recounted stories of pleasant Sunday mornings spent in putting up towel racks while their golf clubs stood idle.

Besides, apartments are generally for rent in the new suburban apartments instead of for sale, and this is an added attraction. Many owners make the purchase of an apartment optional but the more usual method is to give the tenant a lease of from three years upwards.

Exactly what do people want in a suburban apartment? That question was asked of several architects and builders who are active now in the suburban field. The answer was always the same. People want all the conveniences of the city plus the conveniences of the country. They are satisfied with no less.

William C. Haskell of Townsend, Steinle & Haskell, is



Three, Four, Five and Seven-Room Apartments and Garages Are Provided in the Cathedral Apartments Which Afford Every Modern Convenience and Service in a Setting of Gardens and Trees in Close proximity to the Country Club.

erecting a number of apartment houses in Westchester County. He sees the situation this way:

"The small apartments are the most popular. The largest ones which we have are five rooms, and they are always left long after the three-room ones have been taken. This can easily be accounted for. The apartment appeals primarily to those people who either have no families or else have small ones, and so find too many rooms a nuisance.

"Very likely it is the servant problem which is helping to popularize the suburban apartment. Most women find that the less rooms they have the easier they can find a maid, and the easier it is to do without one."

Mr. Haskel has all full-size kitchens in his apartments. According to his experience the kitchenette is not practical for a suburban apartment.

"People do not like built-in furniture, either," Mr. Haskel declared. "I know one man who built in folding beds to save space but he had to take them out. Out in California they were popular, but the people in the East do not like them."

Generally, this is the opinion of the majority of men who are finding out what people want in suburban apartments. Kitchens may be small, but they are still kitchens in which there is enough space to turn around and to cook a good meal.

In the new apartment house designed by Charles Duffy of New York City the kitchens are counted as half rooms. The dining room makes up the other half.

The servant problem is always kept in mind when the suburban apartment house is being designed. Mr. Duffy has provided for floating servant rooms which can be used by the tenants of any of four apartments. Other servants' rooms are built in the cellar of this house, as well as in most others. Architects and builders admit that hotel service would be a fine thing but for the most part they depend on the country clubs to supply it.

According to the consensus of opinion it is the country club and the yacht club which are bringing the people to the suburbs. Men and women want to be nearer the golf course and the bathing beaches. In all the prospectus of the new suburban apartment houses the proximity to clubs is stressed. I quote from two of them:

"... Overlooking the Pelham Country Club, it is surrounded by many handsome residences, country clubs, and fine golf links, is within walking distance of Travers Island, the beautiful country home of the New York Athletic Club, and easily accessible to Long Island Sound with its many bathing beaches and yacht clubs."

"... The Hempstead Country Club is three minutes' walk from the apartment, and there are ten other golf clubs, public and private, within four miles."

W. F. McCulloch and George R. Thompson are the architects for the Hempstead House at Hempstead, Long Island. They have found that tenants are far more interested in the location of the country club than they are in the accessibility of the apartment house to the railroad station.

One of the most interesting features of these new suburban apartment houses is that sites in the residential sections of towns and villages, are chosen for them, instead of sections near the station, in the heart of the business districts. People want the country, when they choose to

live in the suburban apartments, just the same as they do when they buy a small home.

Mr. McCulloch has found that many of his tenants do not have automobiles. For those who have, he has provided small private garages for which a nominal rental is charged. This is the policy which is most generally used by all suburban apartment house owners.

At the Cathedral Apartments in Hempstead three, four, five and seven-room apartments were built. Mr. McCulloch is now erecting another apartment house in the suburbs and he is only planning for small apartments. The seven-room apartments are not popular, and they are hard to rent.

Nearness to the country club is one of the necessary features that tenants demand in a suburban apartment house. Besides, they are particular about the garden surrounding the apartment. Practically every suburban apartment house which has been erected recently is built around a large garden. Because of this, all rooms get unobstructed sunlight. Garden architects see to it that the gardens are as attractive as any boasted by owners of small homes.

According to Mr. McCulloch, although tenants move into the apartment house to escape the servant problem, the apartment house owner has his own help problem to contend with.

"People insist on having excellent superintendents. Besides being skillful and being a jack-at-all-trades, the suburban superintendent has to be a diplomat. He has to know how to do everything from fixing a leaking pipe to placating an irate cook. Most of the new suburban apartment houses do not have elevator service, and the superintendent is in reality the chief 'cook and bottle washer' in the building. And people want a good man for that position. I know, because I have tried to run some houses."

Mr. McCulloch has collected some data on what people are moving into the suburban apartments for. He finds that they are just as popular with families with small children as they are with older couples and newlyweds.

"Many of my tenants formerly lived in their own homes, but they have found it too difficult for one reason or another to continue living in a private house. The no shoveling of snow and no banking of fires plus just enough room for convenience is a pretty heavy inducement."

Altogether, from present building activities, it looks as though even the people who catch the 11:30 out of New York City will go home to their three rooms and bath in some suburban apartment house.



"THE characteristics of good architecture are simplicity, straightforwardness and truth. Fashions and fads are avoided."



Witherbee Court, Pelham Manor, New York, Is Another of the Large Suburban Apartments Which Have Provided Homes for Many Thousands of Families During the Past Year.

# A Modern Garage in Classic Style

By J. HAROLD HAWKINS



The Style of the Ancient Greek Temple Has Been Adapted to Modern Commercial Purposes in Both the Interior and Exterior of this San Diego, Calif., Automobile Salesroom and Garage.

NO fastidious gentleman of olden days ever ordered his hand-wrought coach in so elegant an establishment as that in which the modern, every-day citizen can buy his motor car. Time has changed not only the vehicle but the establishment as well. However, it is just during the last few years that the automobile salesroom has become the "display foyer" as we have it today.

The particular needs of an extremely up and coming automobile distributor of San Diego, California, together with a modern building organization and the creative art of C. D. Kirkpatrick, architect, have produced the latest thing in a motor car salesroom and garage. The fact that this ultra-modern venture is, nevertheless, the product of an ancient source but proves the architect's fine facility for adaptation and his unquestionable ability to combine timeless and abstract beauty with the utilitarian requirements of today. While adhering faithfully to the artistic, the architect has skillfully managed to make this garage and salesroom temple a building of utmost convenience for its purpose and to base the plans on thoroughly modern and practical principles of building.

Unlike much of the architecture in southern California, the majority of which is Spanish, this pure white, concrete, Grecian Temple for automobiles dominates its corner as decidedly in the eyes of the passing public as might the transplanted Rock of Gibraltar.

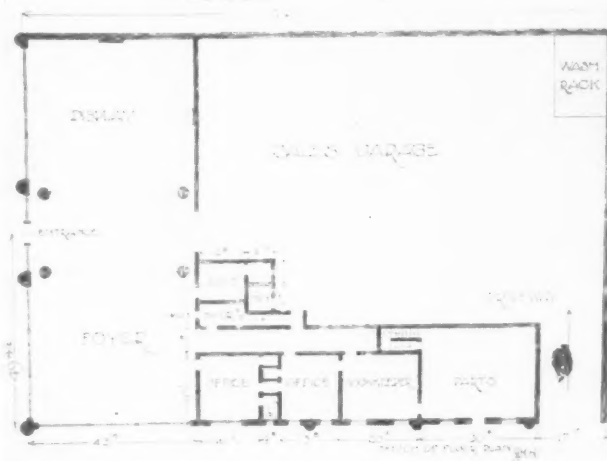
Fluted columns, enormous yet delicately proportioned, give a satisfying solidity to the structure. The automobiles on display behind the

immense sheets of plate glass, sheets that reach all the way to the floor, appear almost like playthings in comparison with the expanse of glass and the massive pillars. The front entrance of the building, with its ornamental, iron lamps on either side, and flanked by towering, white columns is dignified and impressive.

Once inside the display foyer, however, the automobiles take on their natural size and their desired importance. There are six or eight cars standing on the floor at once. The display space measures 43 x 98 feet. The ceiling is proportionately high. In this foyer there is ample room to stand off for an admiring perspective of the lines of any one of the various models shown.

The four interior columns are more elaborate, ornate, than those used on the exterior. Topping plain shafts are Corinthian capitals of rows of acanthus leaves that are heavily gilded. The putty-gray plaster of the walls is interestingly marked off to represent stone blocks about 30 x 40 inches in size. The mottled gray blocks vary in shade, thereby accentuating the illusion of their being separate pieces of material. The entablature carries out the idea of richness which the gilded capitals suggest. Conventional designs are used in the frieze and subdued shades of color are used profusely.

At one end of the foyer there is a mirror set in the wall. It is framed by two slender Corinthian half-columns that support an architrave. Above this, forming an arched plaque on the wall, is a fresco of Mercury, the god of trade, speeding



The Floor Plan of this Classic Garage Shows a Thoroughly Practical and Convenient Layout from the Point of View of Commercial Efficiency.



along beside a huge cog-wheel. On the floor before this decorative setting, as if the mirror were a fireplace, there are placed a suitable table and chairs upon a rich, Oriental rug laid upon the hard expanse of composition floor. Here a buyer may sit in persuasive comfort to "think it over."

On another wall there is a drinking fountain of unusual design. Its main architectural features are two graceful arches, one within the other, and a slab of figured marble set in the wall and framed by the smaller arch and its supporting columns in relief. The flatness of the whole is relieved by rich designs in colors.

Directly opposite the front entrance, across the display foyer, is the entrance to the garage. The doors are mahogany. The frame has a border of conventional designs traced in pastel colors. There is a frieze of Aurora over the whole, her horses prancing to be off on their day's journey through the sky.

The garage is well lighted by skylights and is clear of posts or any obstructions to hinder free maneuvering of automobiles. It is used for demonstration and used cars only. There is no repairing done here, no servicing of cars, so there is no noise. The service garage is located directly across the side street, thus separating the sales and service branches of the business.

A group of offices takes up the space along the side street. There are two private offices, a bookkeeping room and a large accessory and parts room. These offices are away from any interruption or distraction by activities in



**None of the Dignity of the Old Greek Temples Has Been Lost in the Design of the Entrance Which Dominates the Building.**

either the show room or the garage. The doors leading to these different offices and rooms open into a main corridor the end entrance of which is from the display foyer.

Across the corridor from the offices is an information headquarters which has an ornamental grille facing the display foyer. Here is located the private telephone exchange. Next to this office is a ladies' room and adjoining toilet. The men's room is entered from within the garage. There is a door leading directly to the garage from the corridor, as well as the double door which connects the garage and display foyer.

It is a satisfaction to note the really artistic trend of the newer structures throughout the country as compared with the plain and often hideous monstrosities that housed automobile sales rooms even so recently as a few short years ago. This newly completed example of a combination of the artistic and practical for the handling

of the comparatively new business of selling and servicing automobiles is well worth serious consideration on the part of architects and builders.



### Unnecessary Lumber Waste

THE U. S. Forest Service states that, "If present best practices and knowledge were put into effect to the fullest extent economically feasible, it is estimated that 2/9 of the present drain on the forests could be eliminated."



**The Entrance to the Garage Section is Placed in an Elaborate Setting Surmounted by a Frieze of Aurora.**



**A Drinking Fountain of Unusual Design is Framed by Two Arches, One Within the Other.**



**An Oriental Rug, Beautiful Table and Chairs Placed Before a Wall Mirror Form an Attractive Corner in Which Customers May Rest.**

# Small Two-Family Houses Pay

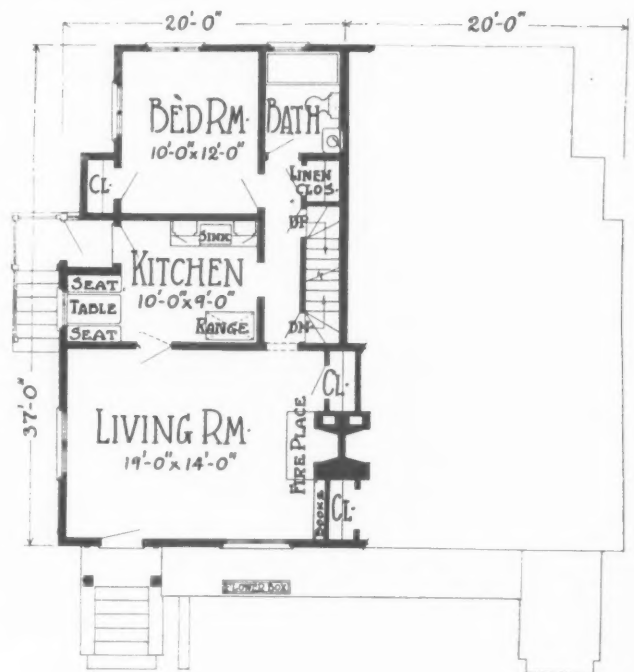
By NAOMI SWETT

**U**NQUESTIONABLY the little two-family house is a good investment, and if built attractively and well supplied with conveniences it need never stand vacant.

This little house, built at Seventeenth and East Burnside Street, Portland, Ore., just ten minutes' drive from the heart of the business district, has a concrete foundation, half basements with laundries, fruit closets and coal bins and modern hot water heating systems. It is built on an inside 50 by 100-foot lot and has a 40-foot width across the front. The garages are 25 by 40 feet.

Each side has four convenient rooms, consisting of combination living and dining room, kitchen and bedroom downstairs and a large finished bedroom upstairs. The living rooms, with their red face brick fireplaces and gleaming white enamel woodwork, express the Colonial character that is adhered to throughout. Here, as in all the other rooms, the checked casement windows are deep, and cross-ventilation is afforded from double, full length windows on each side. On one side of each fireplace is an open, built-in row of book shelves, while on the other side is a coat closet. These occupy the entire inside wall that divides the two apartments. The positions of the coat closet and book shelves being reversed in each side gives a sound-proof wall, thus doing away with the annoyance of hearing sounds from the other side. The living rooms have hardwood floors.

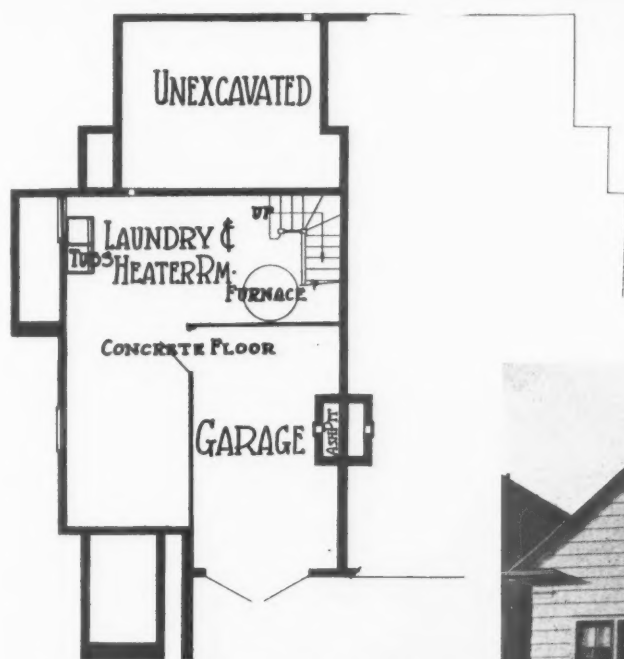
In addition to the doors opening into the little coat closets, two more doors lead off from each living room, one to a long narrow hall and the other to a roomy kitchen.



The Two Floor Plans Are Alike Except for Being Reversed from Left to Right. They remind one strongly of the modern small apartment most common in the larger cities.



A Small Two-Family House Which Has Proved to Be a Profitable Investment and Is an Attractive Addition to Its Neighborhood. The garage entrances are well handled and do not detract from the general appearance of the house.

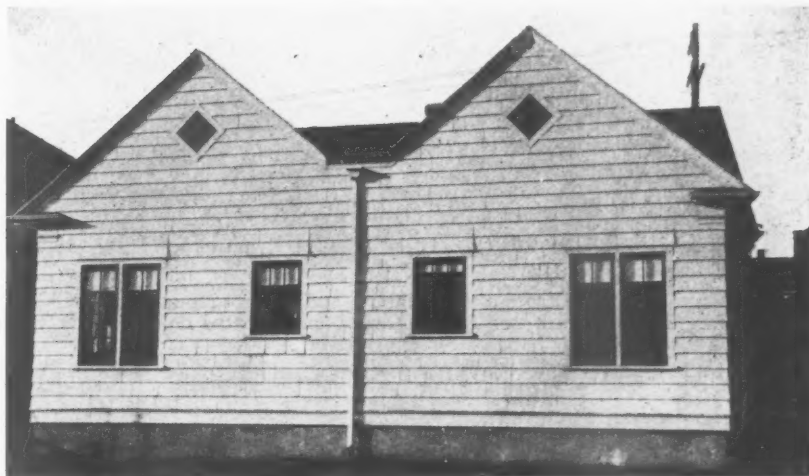


The Basement Plan of This Two-Family House Is Interesting in Showing the Arrangement of Laundry, Heating Plant and Garage.

A noticeable feature of the kitchens is their inviting breakfast nooks, roomy enough to permit comfortable seating, and with full view outside through full length double casement windows. Here the tables are collapsible, so that they may be swung out of place while the floors are being cleaned. Handy outlets provide place for plugging in toasters or percolators. The gleaming white, porcelain, electric range supplied to each kitchen is placed beneath a plaster hood, while the sinks, compact because of their small size, are provided with commodious drawers and bins beneath and convenient Dutch closets above. The newest type of faucets are supplied. Just outside of each kitchen is a little vestibule large enough for placing a refrigerator and then permit passageway, and from these small outside porches give tradesmen's entrances. The plaster walls are finished in white enamel.

At the rear of each apartment is a roomy and attractive bedroom, with enamel woodwork and flowered wall paper. Here cross ventilation is supplied from two pairs of deep casement windows. Like those of the hallway and the room upstairs the floors of the bedroom are of fir, stained natural color and waxed. The bath rooms are equipped with built-in tubs and showers and the floors are finished in magnatite.

The long, narrow connecting passageways between all rooms have each seven doors that open to living room at one end, bath room at the other end, kitchen, bedroom and basement on one side, and on the other side to linen



From the Rear This House Has All the Appearance of an Ordinary Single House with Attractive Shingled Walls and Neat Concrete Foundations.

closet and upstairs bedroom. This spare room is larger than the one downstairs, has good height, and being cut into slightly by the roof, has at its lowest points a height of six feet. All other rooms are full 8½ feet in height. Here, as in the bedroom below there is cross ventilation, from two full windows at one side and a small gable window at the other side.

There is access to each garage from the adjoining basement. This entire house and two garages beneath was built as a cost of \$7,500. The owner lives in one side and rents the other side for \$50 per month. The investment is a good one as the renting side is never vacant.

## Rocky Ledge, a Wayside Cafeteria and Filling Station

By FELIX J. KOCH

ONE of the most attractive and serviceable groups of buildings on the newly completed Dixie Highway is placed at the foot of the steep College Hill, on the northern outskirts of Cincinnati.

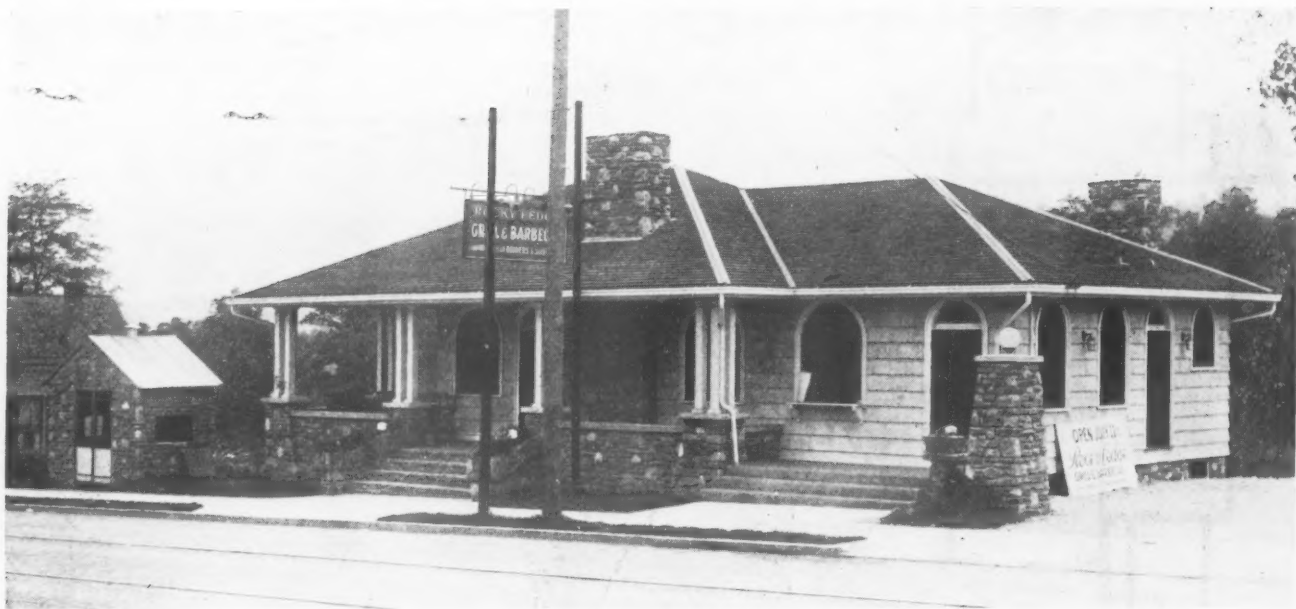
It consists of a simple, inexpensive and yet charming home at one side the road, and wayside cafeteria and barbecue at the other side the road and a bit diagonally across from the house, a filling station, which, particularly by night, when it turns to a mass of radiance against the blacker hillsides, forms a picture not soon to be forgotten.

All of these structures are of local rock, and boulders. The rock is the rude yellow-



Filling Station and Low Wall, Built of Local Boulders, Adjoin the Cafeteria Building Shown on the Next Page and Form a Most Attractive Unit.





A Pleasing Departure from the Ordinary and Monotonous Type of Commercial Building Is Seen in the Cafeteria and Filling Station Known as Rocky Ledge and Located on the Dixie Highway, on the Outskirts of Cincinnati, Ohio.

into-light blue limestone, heavy in fossil, which is found in the nearby Ohio hills. The stones are boulders, jet-black, light browns, dark browns, reds, whites and yellows, that may be had for the picking from the shores of nearby rivers and creeks.

The house is built in bungalow style, main floor and attic; with a rather deep porch across the front; a center hall with rooms at either side. The porch is reached by a center flight of stairs. A tiling roof extends from the actual house roof itself across that portion of the veranda to the topmost of these steps.

There is a great double-door at front center, to admit into the hall-way; large arch top windows flood light into the rooms at either side.

The entire dwelling exterior is of rock, except where facings, such as the broad top to the porch-wall and porch-floor, are preferably of concrete, and tile roof and mill-work.

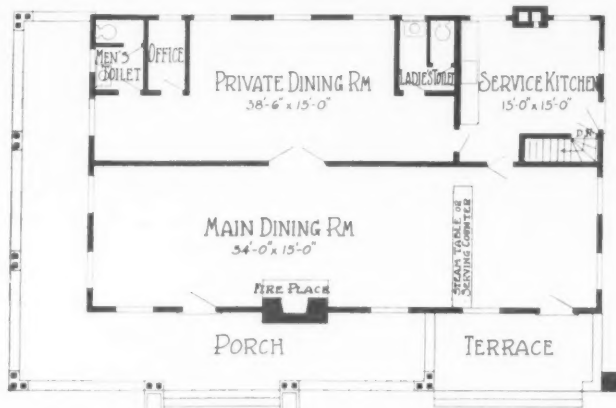
Starting with the curb to the Hamilton Turnpike, which forms this link of the Dixie Highway, a strip of lawn leads into the conventional cement side-walk.

Flanking this, Mr. E. W. Wilson, a stone-dealer of many years' experience, and builder of the structures described here, has erected a purely ornamental low stone wall. This wall consists of a series of arcs, each of which draws in as far as six feet from the sidewalk. Where each curve joins its fellows, a stone pillar is erected. These pillars are seven and a half feet in height. They are square at the base, and taper. The top of each supports a well filled flower box and among these flowers, an extra large, round milk-glass light globe is set.

At either end of the wall the actual drive off the high road enters the grounds, so that motorists may detour for gas, oil and the like. It is built of a crushed stone. Across the drive, at each end there is a rock-pier with its flowerbox well filled so that as one drives in he does so between two piers, trailed with flowers.

The filling station itself is of ordinary Ohio limestone, with cement for fill and trim. Squarely over the drive a canopy of a green tile projects, a part of the pagoda roof of the actual house itself. The effect is striking and attractive. This green main roof extends, sloping out, over the drive and is supported by two massive piers of stone at the far side of the drive.

The filling station structure consists of just one room fifteen feet square. The walls are of the rock throughout.



The Floor Plan of Rocky Ledge Is Simple, a Main Dining Room with Cafeteria Service, a Private Dining Room and a Service Kitchen, the Whole Surrounded by a Broad Porch.

The door is of plain white painted wood millwork. To the right and left of this door are windows also framed in white. The floor inside the station is cement; inside walls are plaster on the stone. The whole is given a coat of a brown color. Ceiling is of metal, and finished in the white.

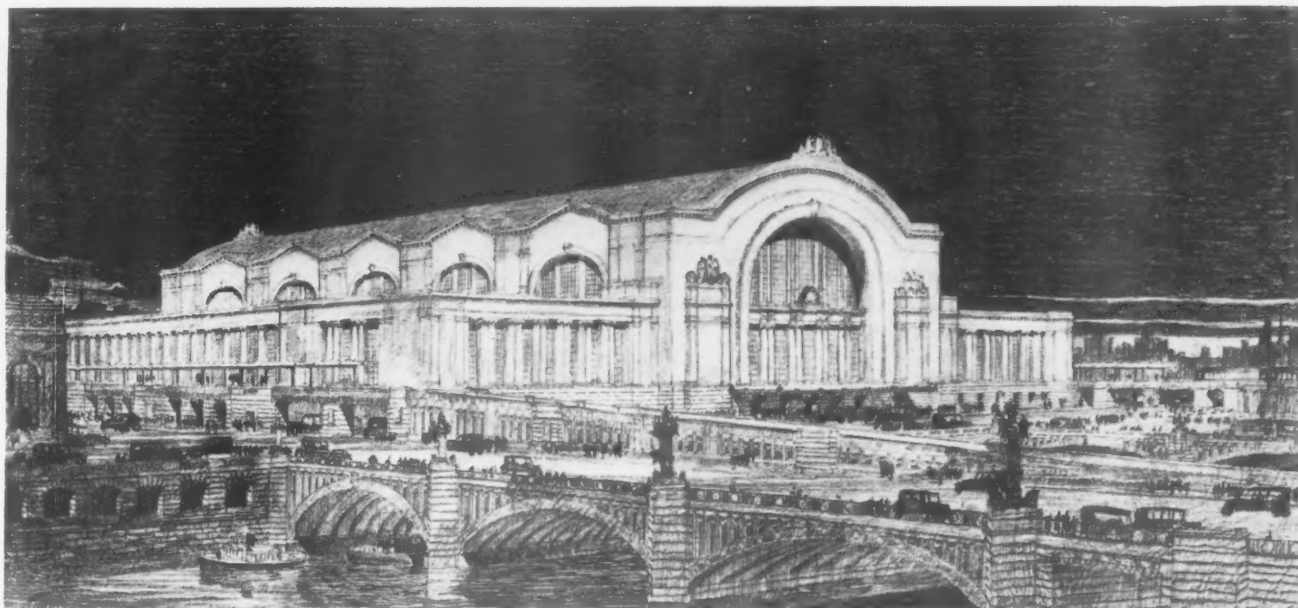
While this filling station consists of just one room, one corner of this, at rear left as you enter, is partitioned off to form a wash-room, with stationary wash-stand and toilet inside. The building is electrically lighted and is heated with an ordinary coal stove through the winter.

Alongside the cafeteria building is a barbecue house with four walls, of the roughest limestone, cemented together in such a manner as to give a rough effect. Windows in the side walls are left paneless, but have two heavy iron bars across from top to bottom in an iron frame. The floor is of cement. From it there rises a brick fireplace of the very roughest style enclosing a heavy iron grid and spit. Arrangement is made for setting the iron bars, to which the ham, roasting pork or side of beef are fixed, over the fire here, and there is a stout iron frame supporting a shallow galvanized iron pan to catch the drip.

One enters the cafeteria by way of stone steps set between two low stone walls, topped with boxes of growing flowers, into which electric globes are set. The steps lead to a porch floored with square red tile.

# A New \$50,000,000 Railroad Terminal For Philadelphia

By ROBERT F. SALADE



New Pennsylvania Railroad Terminal at Philadelphia, Pennsylvania, as It Will Appear When Completed. This view also shows the new bridges across the Schuylkill River, both of which will connect this great station with the center of the city.

**P**HILADELPHIA is to have a new Pennsylvania Railroad passenger station which will be one of the largest and best equipped of its kind in the world.

The completion of this great terminal and its surrounding improvements will mark a new era of progress and advancement in the "Quaker City." The cost of these improvements will be more than \$50,000,000.

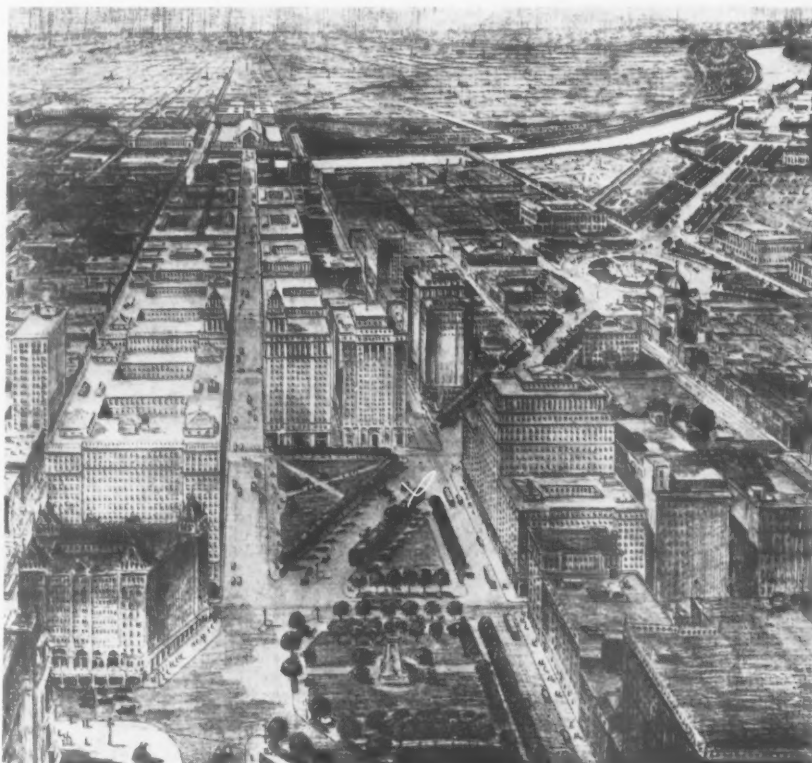
It is a well known fact that the Pennsylvania Railroad Company's present Broad Street Station (located at Broad and Market streets) is overtaxed. Its operation as a main terminal is rendered difficult by the fact that it is not a through station. It is a "stub-end" station, operating in connection with West Philadelphia and North Philadelphia stations of the Pennsylvania system.

The new terminal will eventually replace both the present Broad Street and West Philadelphia stations, and it will bring with it many additional improvements that are bound to be of tremendous advantage to the main business section of Philadelphia.

According to present plans, the new terminal will be located on the site bounded by Market Street, Arch Street, 30th Street and the west bank of the Schuylkill River. These plans call for a station with 18 terminal tracks, having 1,500-foot platforms for through trains. There also will be eight tracks for handling suburban traffic, making a total of 26 tracks altogether. The present Broad Street Station has only 16 stub-end tracks to accommodate all trains (both through and suburban) which enter and leave it.

With the exception of the office portion,

which will be retained and reconstructed, Broad Street Station will be torn down. What is known as the "Chinese Wall"—an unsightly elevated structure for trains, extending



An Architect's Drawing Showing How the New Pennsylvania Railroad Terminal and Surrounding Improvements Will Appear When Completed. The new Pennsylvania Boulevard leads directly to the station entrance while the newly completed Fairmount Parkway extends diagonally from the City Hall to the new Philadelphia Museum of Art.

westward along Market Street from Broad Street Station—will also be eliminated. In place of the old station and the "Chinese Wall," another new station will be constructed entirely underground. This will accommodate suburban trains and will be built beneath 15th and 17th streets, just north of the present Broad Street Station. The new central terminal will lie partly under the bed of Filbert Street, and its eastern end will project beneath the entrance to the Fairmount Parkway, near the northwest corner of City Hall.

Suburban trains will be brought into the underground station by means of a new bridge to be constructed across the Schuylkill River, south of Arch Street, leading into a new subway to have four or more tracks, beginning at a point between 20th and 21st Streets, and running beneath the bed of the present Filbert Street. These features will place all railroad facilities east of the Schuylkill River entirely under ground, with the exception of the eastern approach to the new bridge. This underground improvement will also do away with the operation of steam locomotives into the center of the city from West Philadelphia.

Connecting with the new underground suburban station will be a pedestrian subway extending completely around City Hall, beneath the existing plaza, and thus linking the new station with the entire system of rapid transit subways, including the Broad Street subway now under construction, and the other subways to be constructed under Walnut, Chestnut and Arch Streets. The pedestrian subway will also provide various exits at the street levels, north, south, east and west of City Hall.

The plans call for the construction of a new central highway, to be named "Pennsylvania Boulevard," extending from the end of the Fairmount Parkway, at the northwest corner of City Hall, to the river front of the new Pennsylvania terminal on the west bank of the Schuylkill. This boulevard is to be constructed along the line of the present Filbert Street, and will be 80 feet wide.

The new Pennsylvania Station will be of beautiful architectural design, and will embody every improvement for the comfort and convenience of passengers. There will be two levels of track, the lower one for through and other long distance trains, and the upper one for suburban traffic. The suburban tracks will cross above the lower tracks at right angles, and will extend into the heart of the city by means of the new bridge, tubes and underground stations referred to. The suburban trains will stop at both the main terminal and the central station.

The removal of the "Chinese Wall" will not only help in making the new 80-foot-wide Pennsylvania Boulevard possible, but it will also open a very large territory in and near the center of Philadelphia which can be developed for general business purposes. Many imposing buildings will be erected along Market Street, on the ground now occupied by the "Chinese Wall," and along the new Pennsylvania Boulevard.

Another feature of this remarkable plan calls for the erection of a new and greatly enlarged Federal Postoffice building, on a site south of the new terminal. The first step in this great terminal improvement has been taken by the Pennsylvania Railroad Company. This refers to a 14-story office building, to be erected on 32nd Street.

## A Business Block Development

By THEODORE M. FISHER

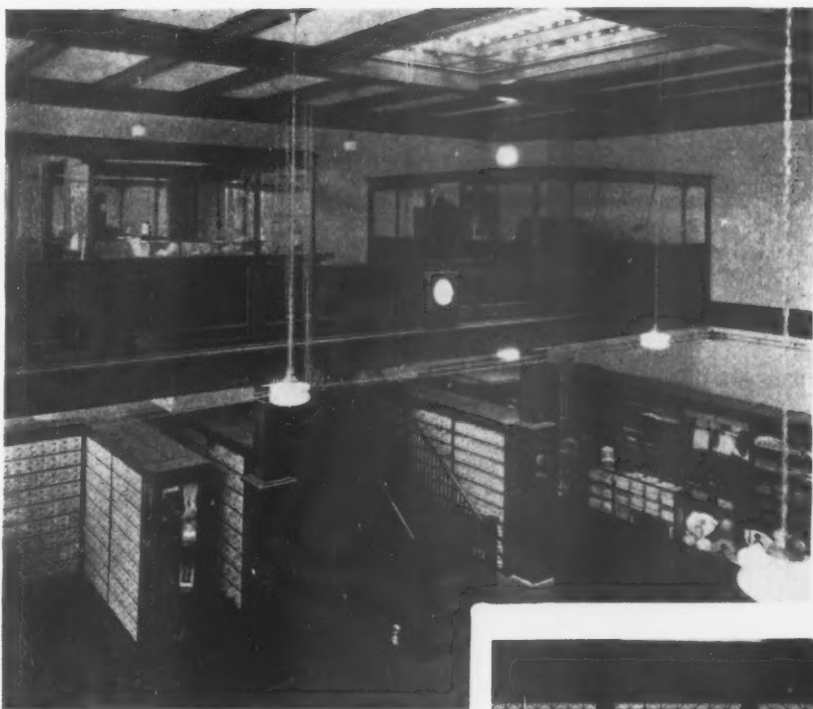


Here Is Shown a Remodeling and Building Project on Adjacent Properties Which Was Handled by One Architect, Thomas P. Barber, to Form a Harmonious Whole While at the Same Time Giving a Diversity of Architectural Style. The result is one of the finest business corners to be seen in Colorado Springs, Colorado.

**I**N recent months one of the oldest and busiest corners of Colorado Springs' downtown section has been transformed from a nondescript to a very handsome one. Merton Robbins has completely remodeled and rebuilt what was one of the city's earliest brick business blocks.

At the same time J. G. Dern has remodeled his own store on Tejon Street nearby and replaced the antique frame structure between his place of business and the Robbins corner with a new store which he rents. The whole was planned by Thomas P. Barber, architect, as a harmoni-





Light Well and Balcony at the Rear of the Robbins Store. On this balcony, which overlooks the entire store space are the executive offices and also a shop space for handling the tailoring work.

ous unit but with a diversity of architectural style, that of the Robbins corner being "Mission," and the other Italian.

The principal changes effected by Mr. Robbins are the complete removal of a third story, entire replacement of the exterior, deepening the structure 45 feet which has given him a corresponding extension of his Colorado Avenue window frontage, and a complete remodeling of the interior of his men's furnishing store. The present exterior is developed in a buff texture brick combined with polychrome tile in tones of red and buff with these colors repeated in the scored Mission tile used for roofing.



The Hat Department, Near the Store Entrance, Is an Example of the Neat and Handsome Manner in Which the Entire Place Has Been Finished.



These First and Second Floor Plans Show How the Rear Portion of the Store Space Has Been Given Two Stories of Height with a Balcony to Provide for the Store Offices and Tailoring Department.

and roof skylight and a balcony office and tailoring department.

The front of the section built by Mr. Dern is enriched with blue terra cotta tile for second floor window treatment. The Thorsen Department Store next to Robbins' has a basement and first and second stories. At the back it connected with a one-story section fronting on Colorado Avenue, which is not shown on the accompanying floor plans. Mr. Dern uses a basement and three floors for his tea, coffee, spice, and candy manufactory and sales rooms. A service elevator connects the four levels.

The entire block has an east frontage of 100 feet on Tejon Street and a south frontage of 115 feet on Colorado Avenue.



"GOOD architecture is preeminently practical. In small houses the practical can be accomplished at small cost."

# Mexico City's Modern Buildings Sink in Spongy Soil



The Massive National Theatre, as Yet Uncompleted, Which Was to Have Been the Chief Playhouse in Mexico City, Is Already Sinking in the Spongy Soil. In an attempt to save it liquid concrete is being pumped under the structure, but it may become a complete ruin.

STEEL and concrete have been responsible for the remarkable rise of New York, Chicago, and other great cities of America, but they may eventually spell the doom of Mexico's capital. A modern city of massive buildings has arisen where once the mud huts of the Aztecs stood, and now Mexico City is the ninth city, in population, of North America. But recent developments tend to show that the spongy soil on which the Mexican capital is built is no proper foundation for an immense metropolis of steel and concrete, and these features of its modern civilization are actually sinking the city slowly but surely into the earth.

The splendidly conceived, but as yet uncompleted, National Theatre is already subsiding very apparently upon its foundations, and efforts are being made to strengthen it by pumping liquid concrete beneath the structure. The church of Loreto, a magnificent edifice on one of the prominent streets, now lists like the Leaning Tower of Pisa because its foundations have sunk on one side. At least one leading hotel on the

Avenida Juarez has sunk so that guests must walk down three or four steps to the lobby that was once on the street level. The School of Mining and Engineering, located in a palatial government building, has dropped in the middle until it now presents a concave aspect.

Even the great cathedral, more than 300 years old, is reported to be sagging in a manner that will sometime bring about its collapse. The new home of the Mexican Foreign Office has in the few months of its existence already sunk several inches. Fifteen years ago an imposing memorial to Mexico's independence was begun on the Paseo de la Reforma, but when the work was half completed the base had sunk to a depth of three feet below the level. The entire foundation had to be laid over before the work could go on.

Furthermore, earthquake shocks are of frequent occurrence, and any particularly severe shock might be expected to shake not a few of the city's large buildings from their insecure foundations. The last serious quake that affected the city was in



The Big Municipal Palace of the Mexican Capital, Rivaling the National Palace in Grandeur, Is One of the Buildings Threatened by Settling.

July, 1909, and the shock wrought considerable damage and loss of life.

How did it come about that the city of Mexico should have developed upon a foundation so far from stable and so menacing to the future? If modern city planning engineers were to choose a site for the metropolis of the country, it is certain that they would never select such a location as this. But the situation of Mexico City was picked out, not by architects and engineers of today, but by a tribe of Aztec Indians whose only efforts in building construction were mud and rush dwellings and a few small stone temples. The Spaniards found the city on this site and maintained it there, little thinking what changes in construction three or four centuries might bring.

When the Aztecs settled Mexico City 600 years ago, it was an island in the center of Lake Texcoco. The Aztecs settled there in 1325 because of the security afforded by the group of islands and shallow waters, their city being so completely surrounded by water that a handful of warriors could easily defend its approaches against a greatly superior enemy force.

This island habitation, which was practically a lake-village built on islets, some of them artificial and perched on stakes, grew rapidly with the increasing power and civilization of its people. The town had reached its highest development when the Spaniards appeared in 1519, when it is said to have, including some suburbs, a total of 60,000 dwellings, representing about 300,000 inhabitants. It was at that time about twelve miles in circumference, everywhere intersected by canals, and connected with the mainland by six long and solidly constructed causeways.

After its almost total destruction in November, 1521, Cortez employed some 400,000 natives in rebuilding the city on its former site. Since then the lake has decreased greatly in extent, its shore-line being now three miles distant from the city it once surrounded. Mexico City became known as one of the worst drained cities of the New World, its subsoil being permanently saturated and its artificial drainage being through open ditches into the San Lazaro Canal which discharged into Lake Texcoco. The difference in level between the city and the lake being less than 6 feet, and the lake having no natural outlet, typhoid fever became a common epidemic.

Maartens, a Dutch engineer, planned to remedy the evil by a canal cutting thirteen miles long to carry the lake



Facade of the Mineria, Containing the Schools of Mining and Engineering. This building is sinking in the center and already presents, at the base, the aspect of a concave curve.

overflow to the River Tula, and this was begun in 1607, a year when the city was completely flooded. It was not finished until 1789 after the expenditure of an enormous sum of money and the lives of 70,000 Indian laborers, and then it was found that the city was still subject to inundations. The worst flood occurred in 1629, when the streets were covered to a depth of 3 feet and remained so until 1634. Finally proper drainage was secured by a canal and tunnel forty-three miles long, built between 1856 and 1900.

But the city still remains on soil that is soft and spongy and may never become entirely dry and suitable for the building of a metropolis above it. Only time can tell whether the city, celebrating its sixth centenary this year, will ever be able to observe another centenary.

It was several years ago that work was started on the National Theatre, a massive edifice in solid marble. For this playhouse there was designed the famous Tiffany glass curtain, costing \$500,000. Lack of funds caused work to be stopped on the theatre; but, when the unfinished structure was seen to take a southeasterly slant as its foundation sank into the yielding soil, there was a popular agitation for an attempt to save the building. Ton after ton of liquid cement has been pumped into the subsoil to stabilize its foundations, but no one can say yet whether this effort will be successful.

The Mineria, containing the schools of mining and engineering, ranks among the foremost institutions of its kind in the world. This institute was established in an effort to train Mexican citizens to develop the immense mineral resources of the country. But this handsome edifice has settled in the center until its base now has the effect of a concave curve.

And such has been the case with many other buildings in the city, though in lesser degree. More and larger structures are being planned and erected continually, and what the result will be cannot be predicted. Mexico City, with a population of more than 633,000, standing above Los Angeles and Pittsburgh among American cities and pressing hard upon the heels of Boston and St. Louis, may yet find that its adoption of steel and concrete will result not in progress to a higher civilization, but to total and irreparable ruin.



The World's Most Luxurious Postoffice, Located in Mexico City, Has Not as Yet Shown Any Disturbances, but Many Others Near It Are Affected and It Also May Be in Danger.





# Homes in COLORS

## *How These Designs Are Helping Home Builders*

By WILLIAM A. RADFORD

*President and Editor-in-Chief  
of the American Builder*

**W**E have been getting a good many letters of late commenting on the Home Designs in Colors which we have been presenting every month in American Builder. Sixteen pages in this unique and artistic style have been presented every month for seventeen months without interruption, nearly three hundred designs having already been presented in this department.

In view of the fact that it is costing us more than \$100,000.00 a year extra to present these home designs in full colors, it has been very gratifying to hear from so many of our readers commenting on these designs in colors and telling us how very useful they are.

Some, perhaps, are getting more value than others from these home designs. Let me tell you what some of the readers are doing to get real value out of this department of the American Builder. You may be able to do the same.

For instance, J. G. Arundell, a dealer in Napa, California, writes: "I have shown American Builder to my friends and prospective customers and two of them have had homes built from plans shown in your colored section. I find in talking to people about building of any kind, if I have two or three of your magazines with me, it makes talking a whole lot easier. Also I find the catalogs sent out by your advertisers are very useful in this way. The best contractors and builders in this vicinity all make good use of the American Builder."

Mr. F. L. Stoltz, an enterprising dealer in lumber and building materials, Evansville, Indiana, writes that he gets many new ideas from the Homes in Colors, not only in regard to convenient floor plans, but also for outside details such as roof lines, gables, porches, etc. He evidently incorporates these good architectural elements into designs of his own. He adds, "We think the American Builder is the best to be had and do not hesitate to tell others so."

Erle W. Fristoe, manager of the Warsaw Lumber Company, Warsaw, Mo., writes that he has found the American Builder of considerable help in getting prospective customers interested. "We find the Homes in Colors one of the most attractive features of the magazine," he writes. "Most all of the customers who visit our office are interested in the home designs and the new ideas in equipment, etc., which they see in our copy of the American Builder. We go through every copy carefully for what is new in the building world and we find the advertising of much interest and help in securing what we need in our business."

H. A. Hamlin, sales manager of the Hartwick Lumber Company, Detroit, writes us of a very interesting experience. They have been supplying a number of the active contractors and builders in Detroit and suburbs with copies of the American Builder, also mailing out each month to a large list of prospective home builders reprints of our Home Designs in Colors in booklet form. Mr. Hamlin writes that a contractor who had never before done any business with them recently came into the office and bought materials for a group of eighty-five houses, every one of them a different design and every design taken from the American Builder Home Designs in Colors. He is starting twenty-five of these houses immediately, the others to follow in the early summer.

The Detroit suburbs, especially out Birmingham way where these houses are to be built, are famous for their good architecture. These designs selected will certainly not be out of place in such a community, but will add to the beauty and charm of their neighborhood.

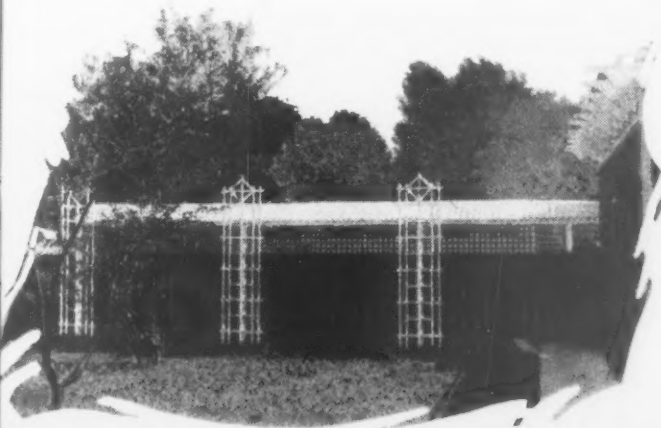
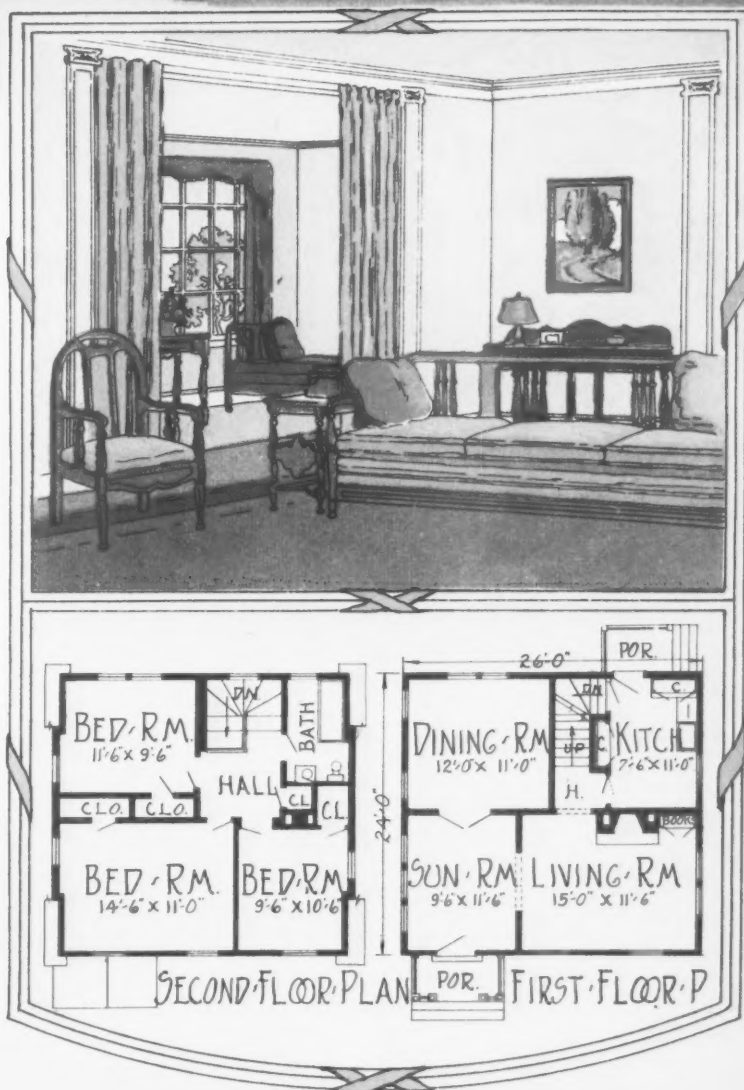
I hope that many others of our readers will find these Home Designs in Colors equally valuable in their work of selling, planning and building homes.



## The QUINCY

AN American Colonial type containing seven rooms and bath. The entrance is into a large, well lighted vestibule, marked sun room on the plan, and is a valuable adjunct to both the living room and the dining room. This is an economical house to build; 24x26 feet, practically square in outline. Color sketch to right illustrates the modern trend in furniture and draperies.

Pat. March 15, 1921 and Sept. 30, 1924.  
Copyright 1926, Wm. A. Radford, Chicago.

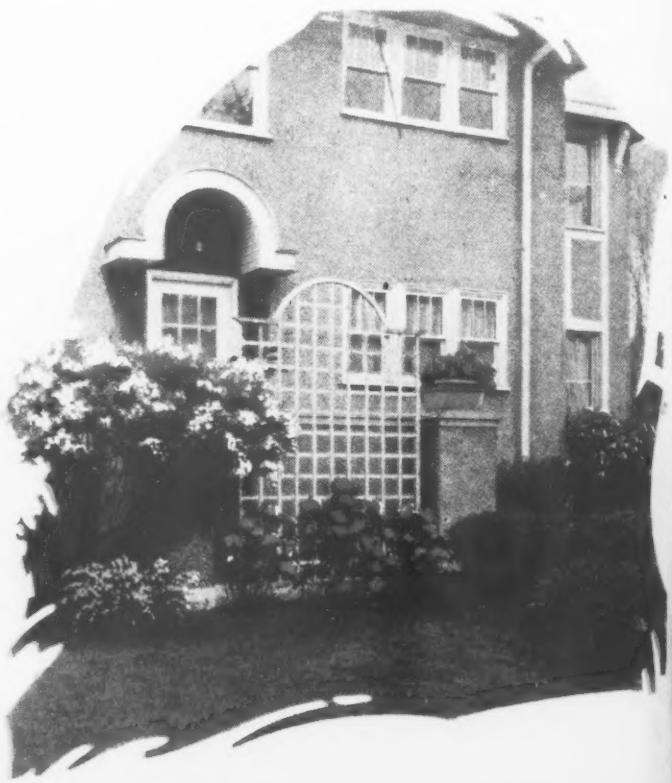
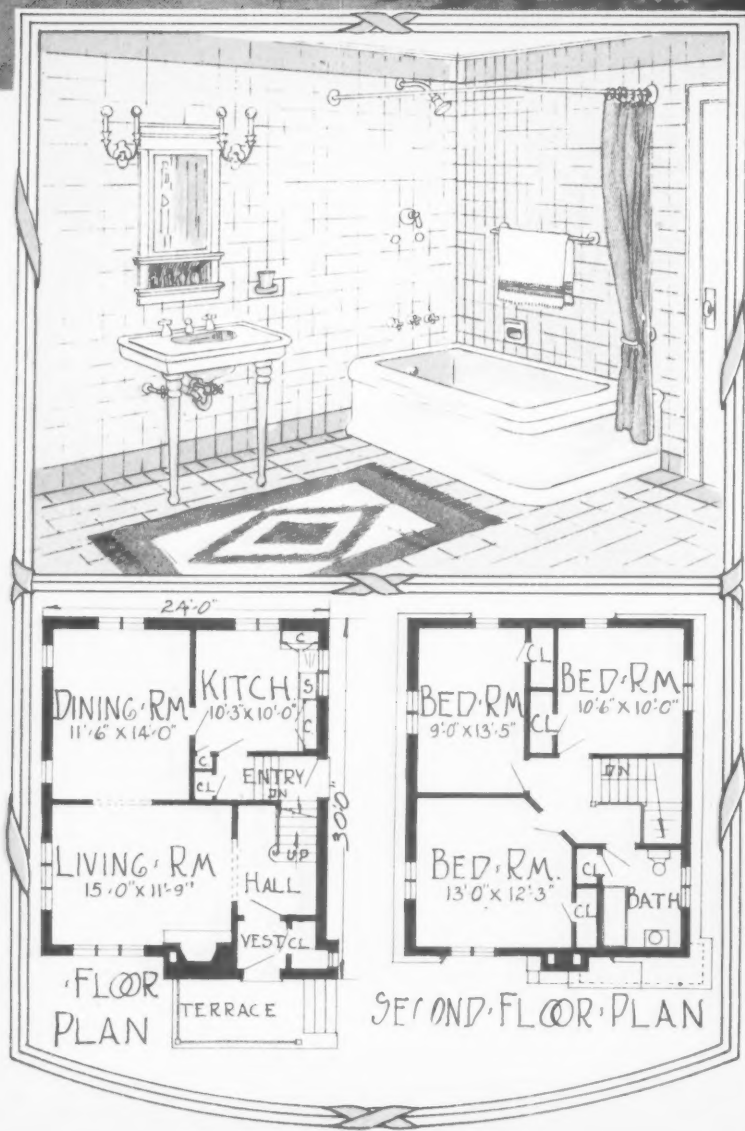






## The QUIMBY

THE chimney and vestibule of this attractive little home are of brick construction and here and there the brick peeks through in a way that is intriguing to one's artistic fancy. These touches when used with judgment raise a design from the commonplace. This house is 24x30 feet and contains six rooms and bath. Color sketch to left suggests a rich equipment of plumbing and tiles for the bathroom.

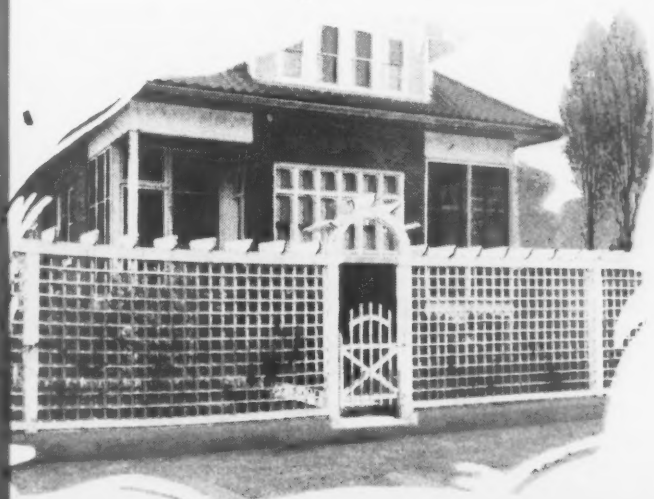
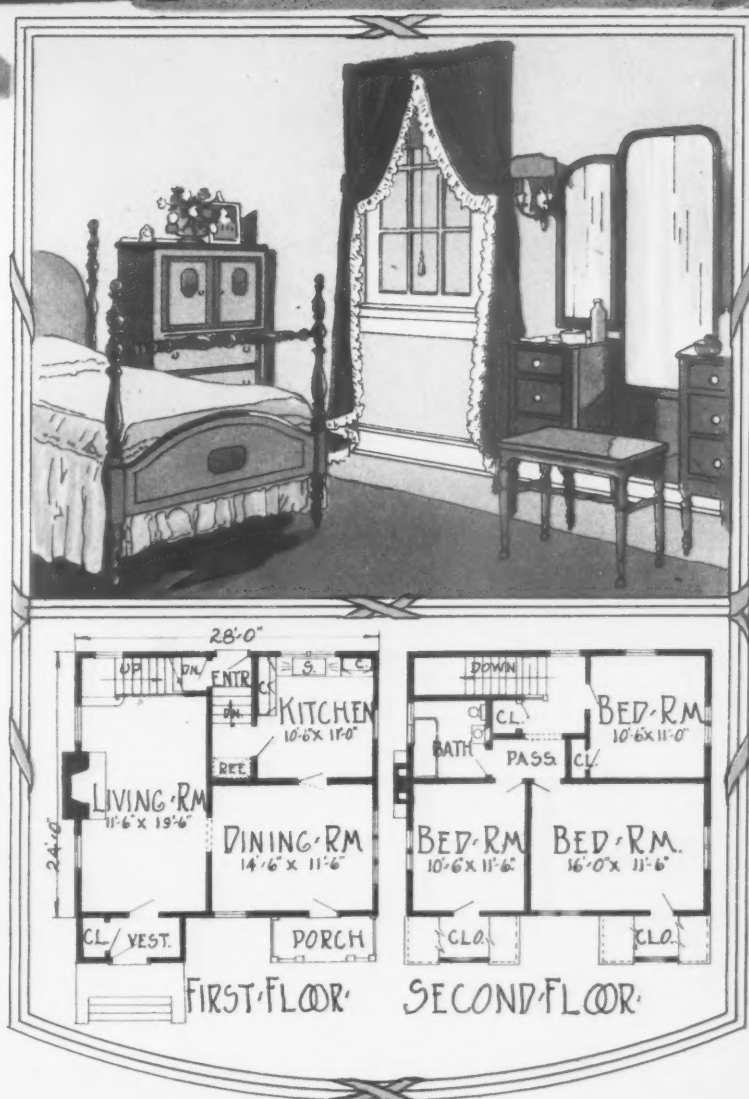




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## The QUEEN CITY

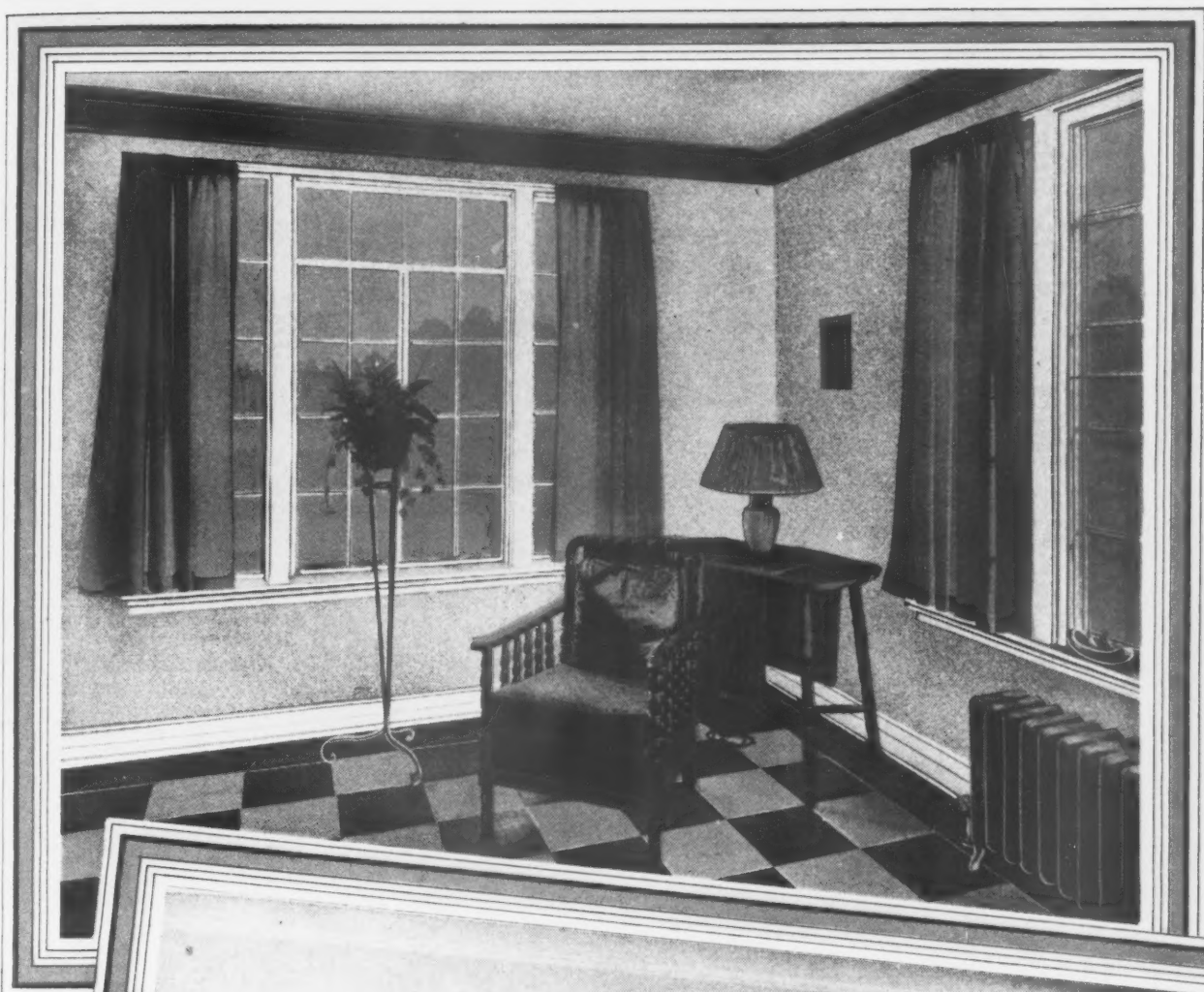
HERE is a neat little design of much individual charm. The formal entrance is balanced by a private porch opening from the dining room. Aside from these two front projections the plan is rectangular, 24x28 feet. The rooms are well arranged for convenience. Color sketch to right shows very attractive furnishings for one of the bedrooms.





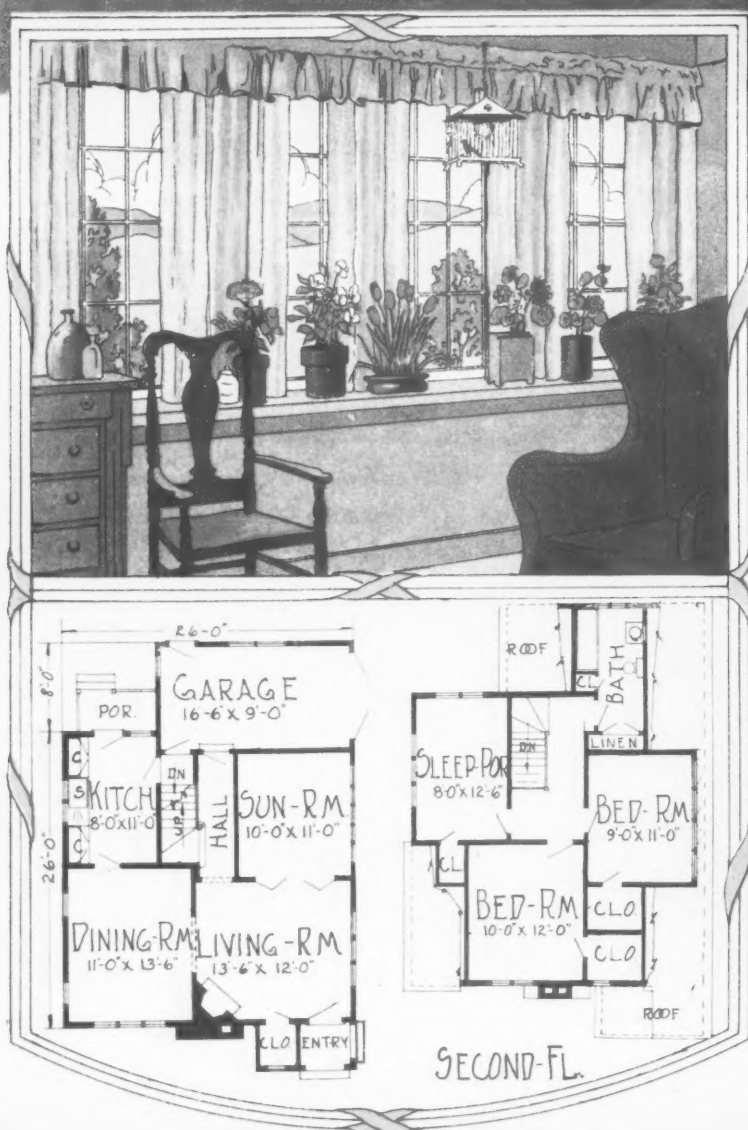
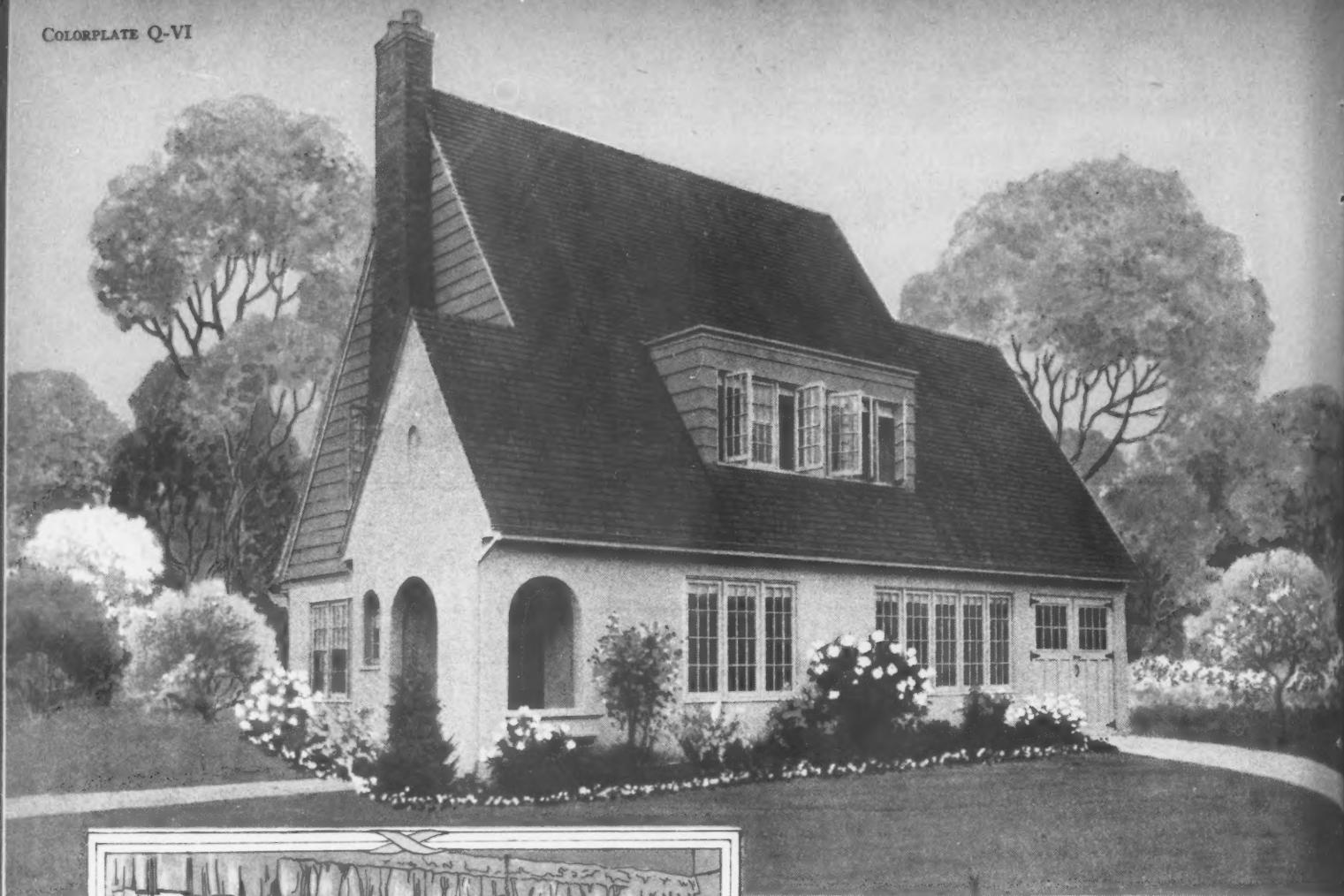
**E**XTERIOR and three interior views of a very beautiful and individual residence of Mr. Gordon Fearnley, Sherwood Forest, Detroit, Michigan;





Ricardo French, Architect. The use of modern steel casements and their very successful curtaining are well illustrated.





## The QUIVER LAKE

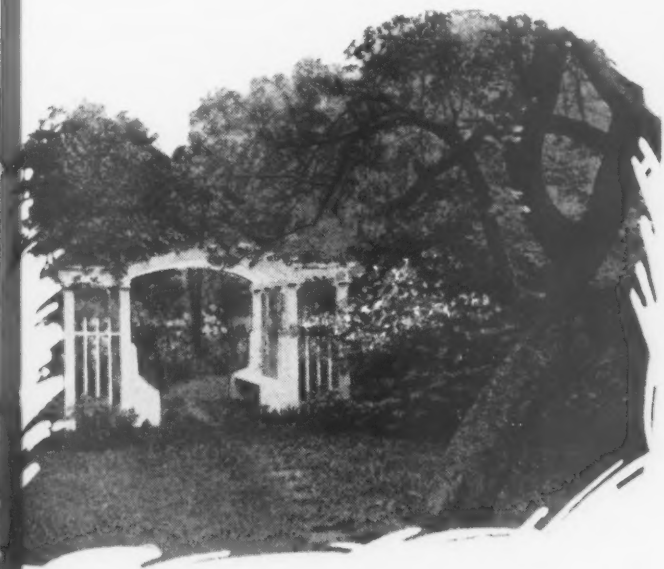
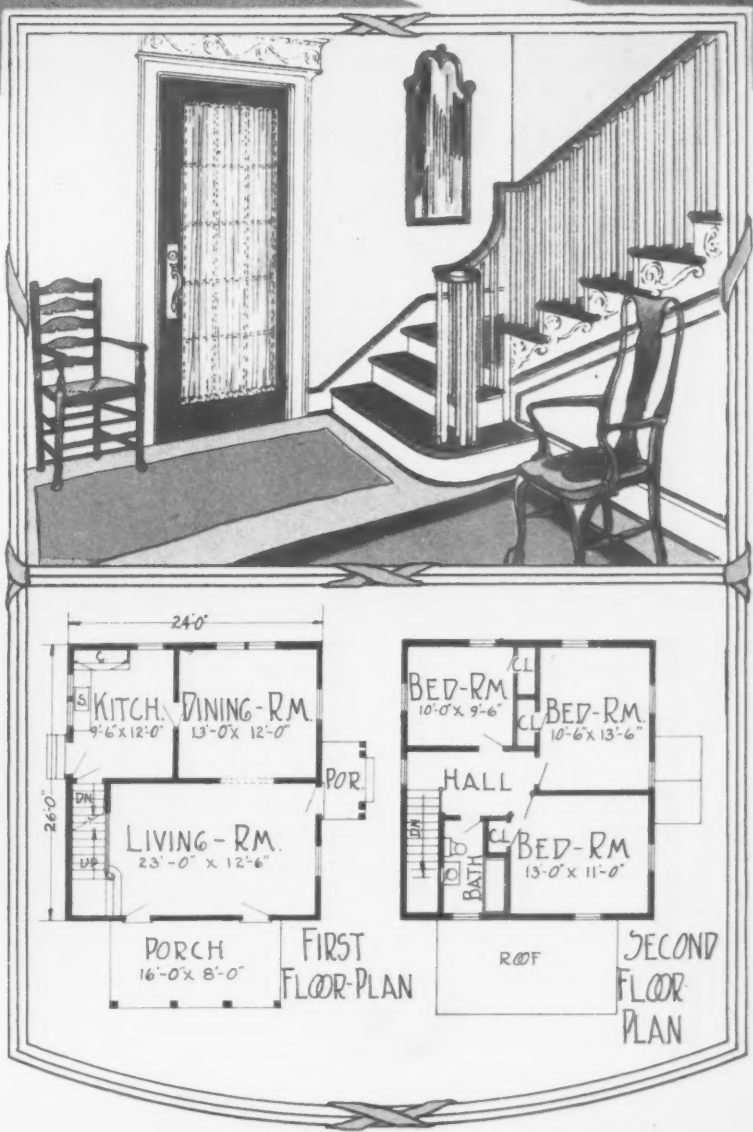
AN ideal corner lot design with attached garage; main entrance from one street and garage driveway from the other. This is a design with high gable roof and prominent casement windows in the English style. Seven rooms are provided. Color sketch to left shows a glimpse of the sun room.



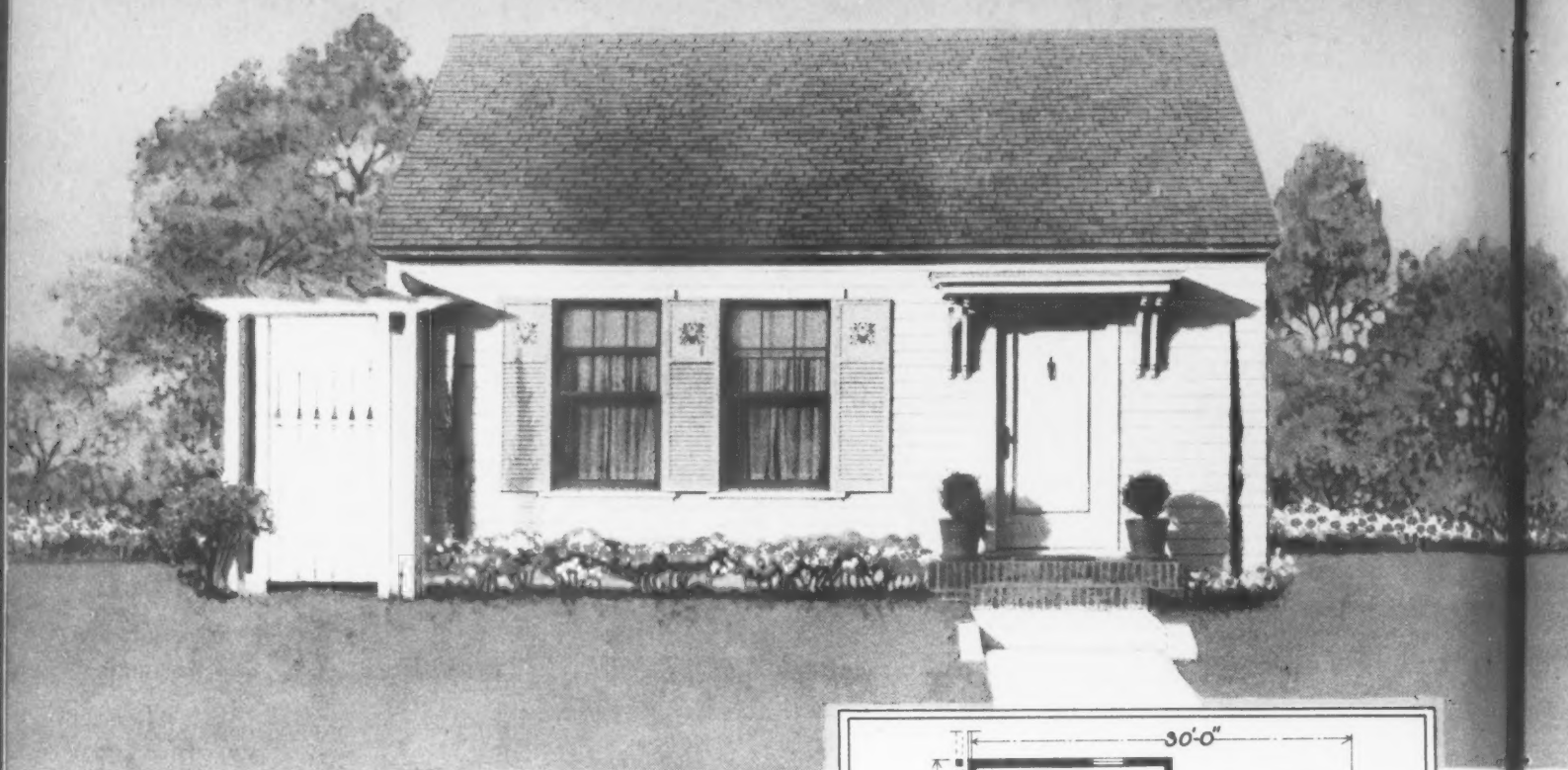


# The QUINLAN

HERE is a perfect example of the straight gable Colonial as applied to a small house, 24x26 feet. The exterior is typical but the interior has been rearranged to save space, the customary central stairway being moved back to the end of the living room. Color sketch to right shows what an attractive feature of the living room this stairway has become.

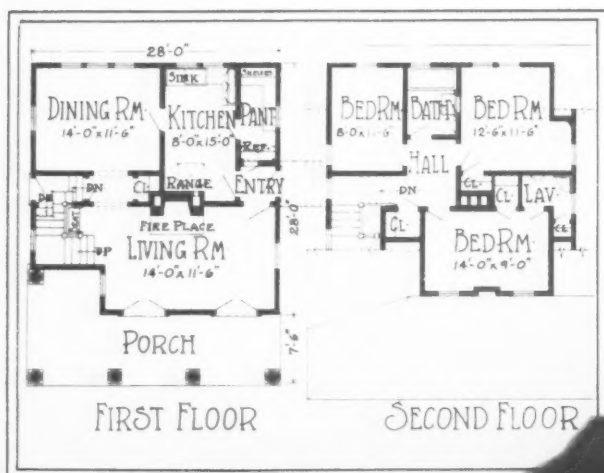
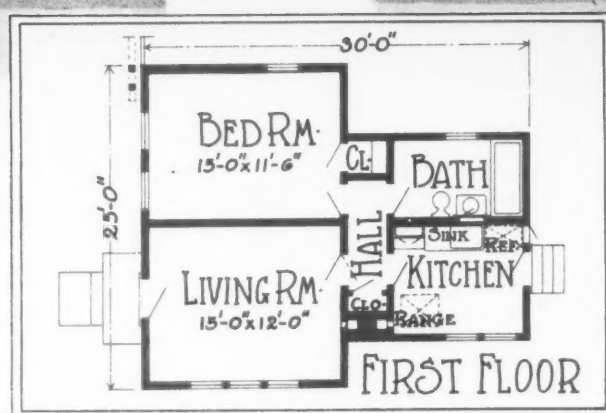






### The QUINWOOD

Above and to the right is presented a three-room Colonial cottage, 25x30 feet.

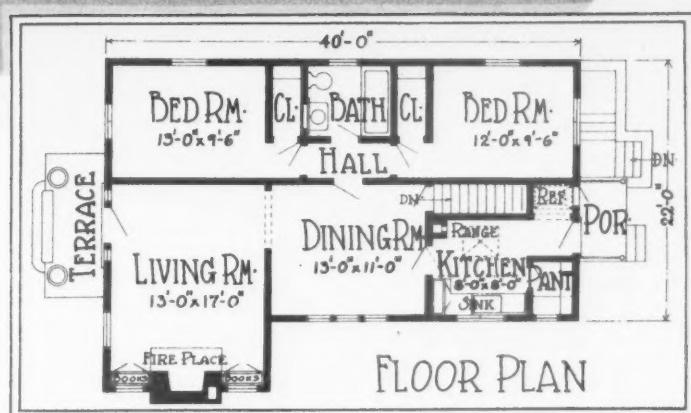


### The QUITMAN

Below is a small Dutch Colonial home, size 24x28 feet, containing six good rooms.





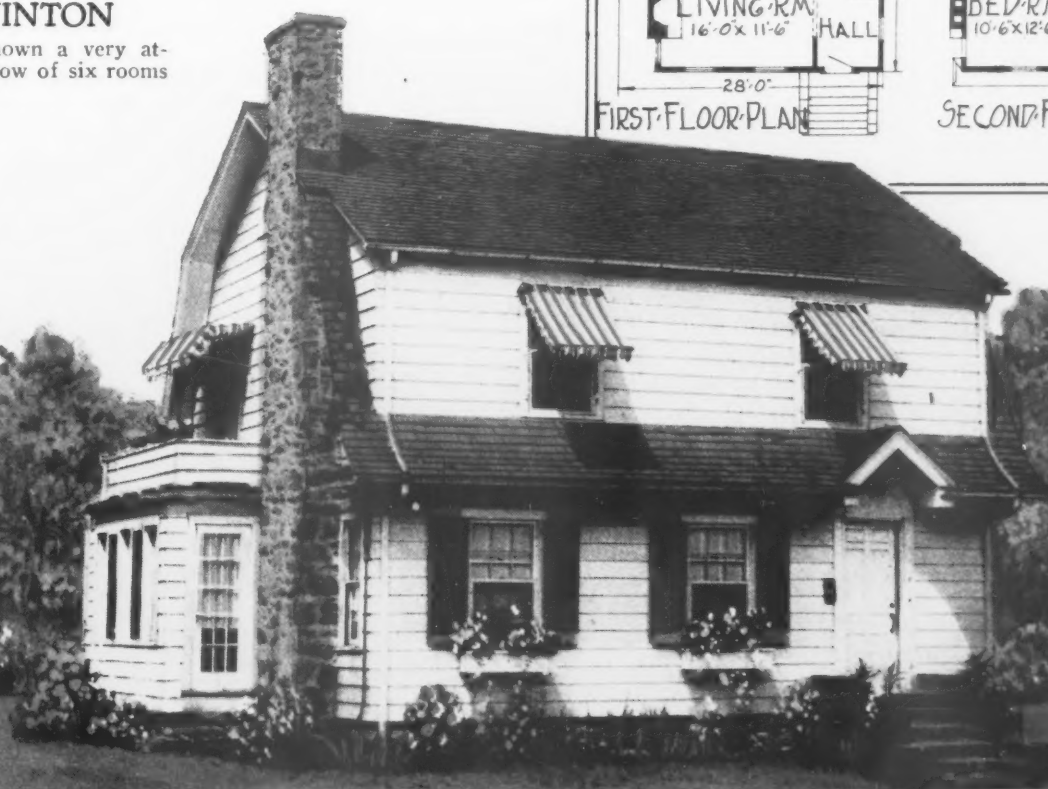
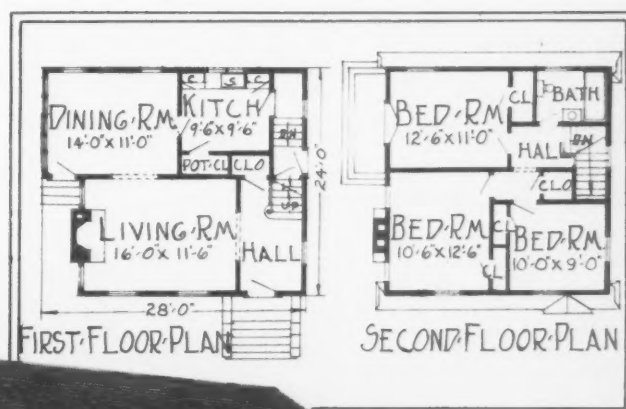


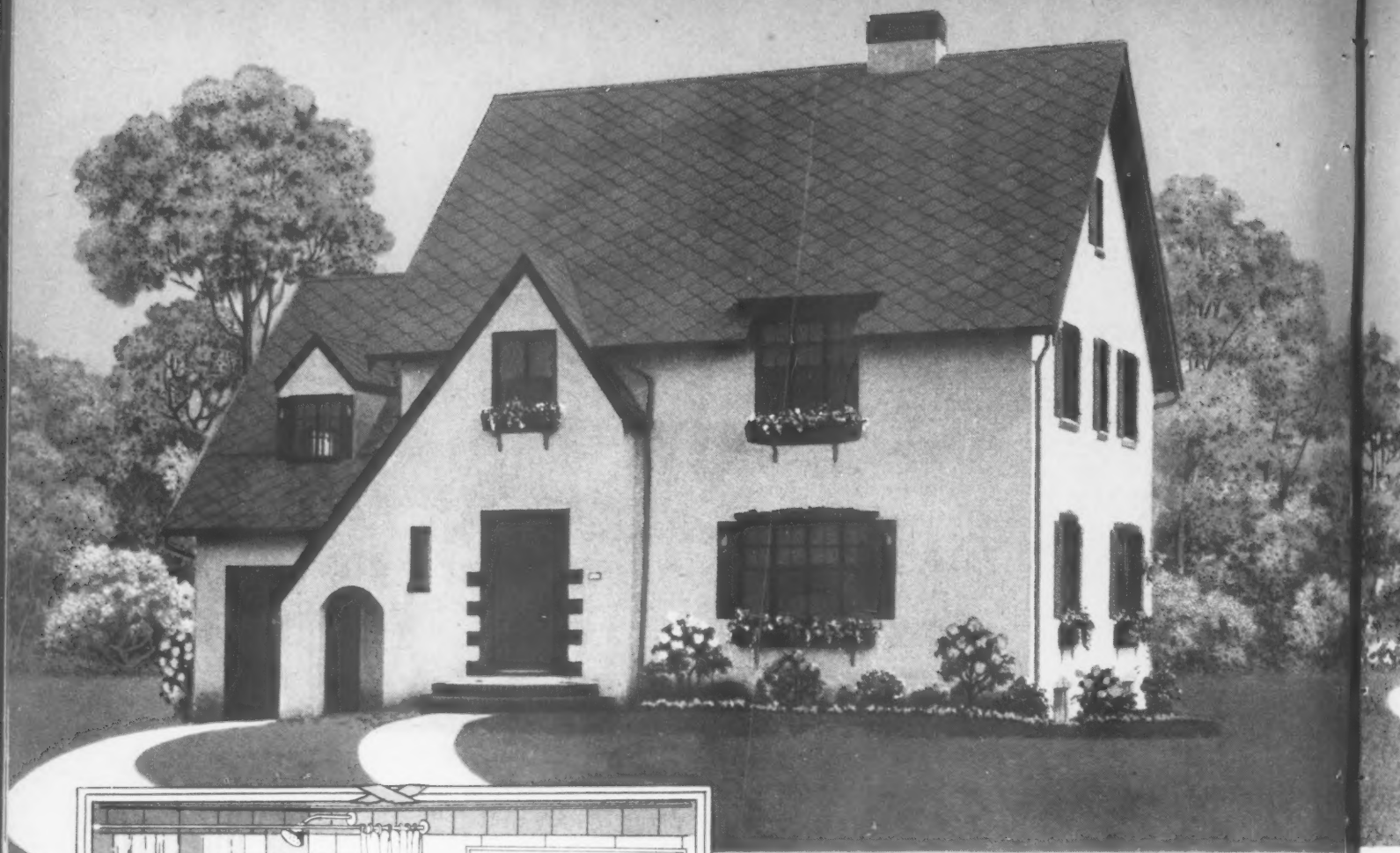
### The QUINTON

Above is shown a very attractive bungalow of six rooms and bath.

### The QUINAULT

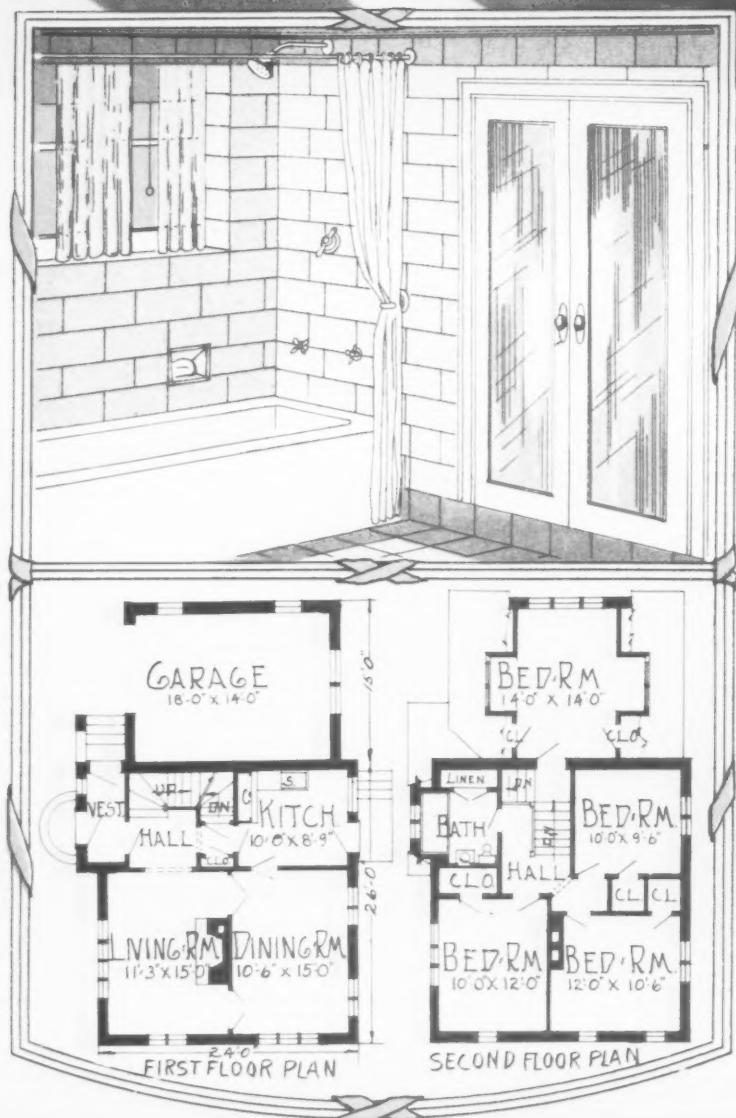
Below and to the left is presented a delightful small home of six rooms, size 28x28 feet.





## The QUARRYVILLE

AN interesting English design with attached garage, containing six rooms and bath in the main house and a very attractive room half way up the stairs over the garage. A house of masonry construction, either tile, brick or concrete units stuccoed and with a roof of rigid asbestos shingles. Color sketch to left illustrates the bathroom tiled to the ceiling with vitreous glass.

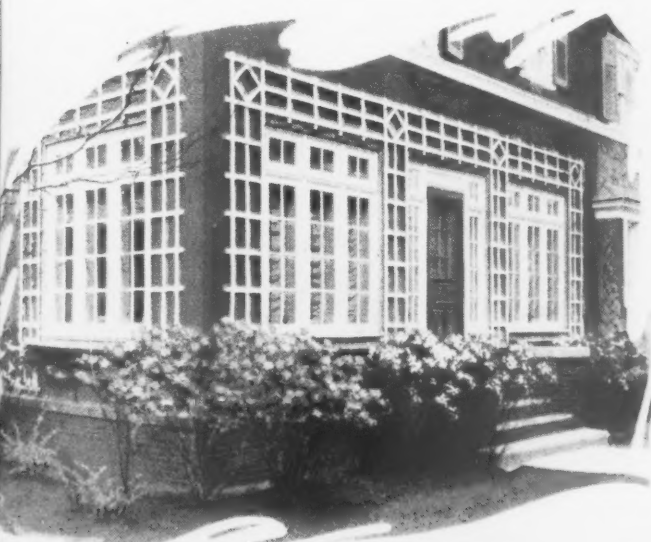
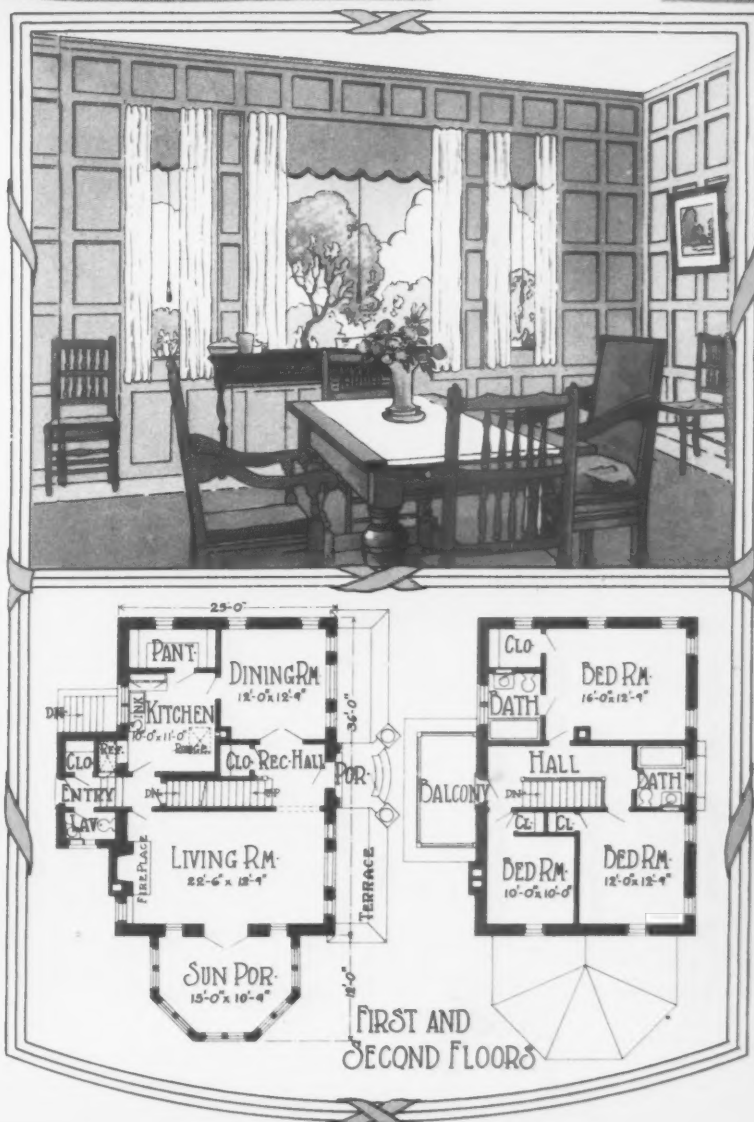






## The QUEBEC

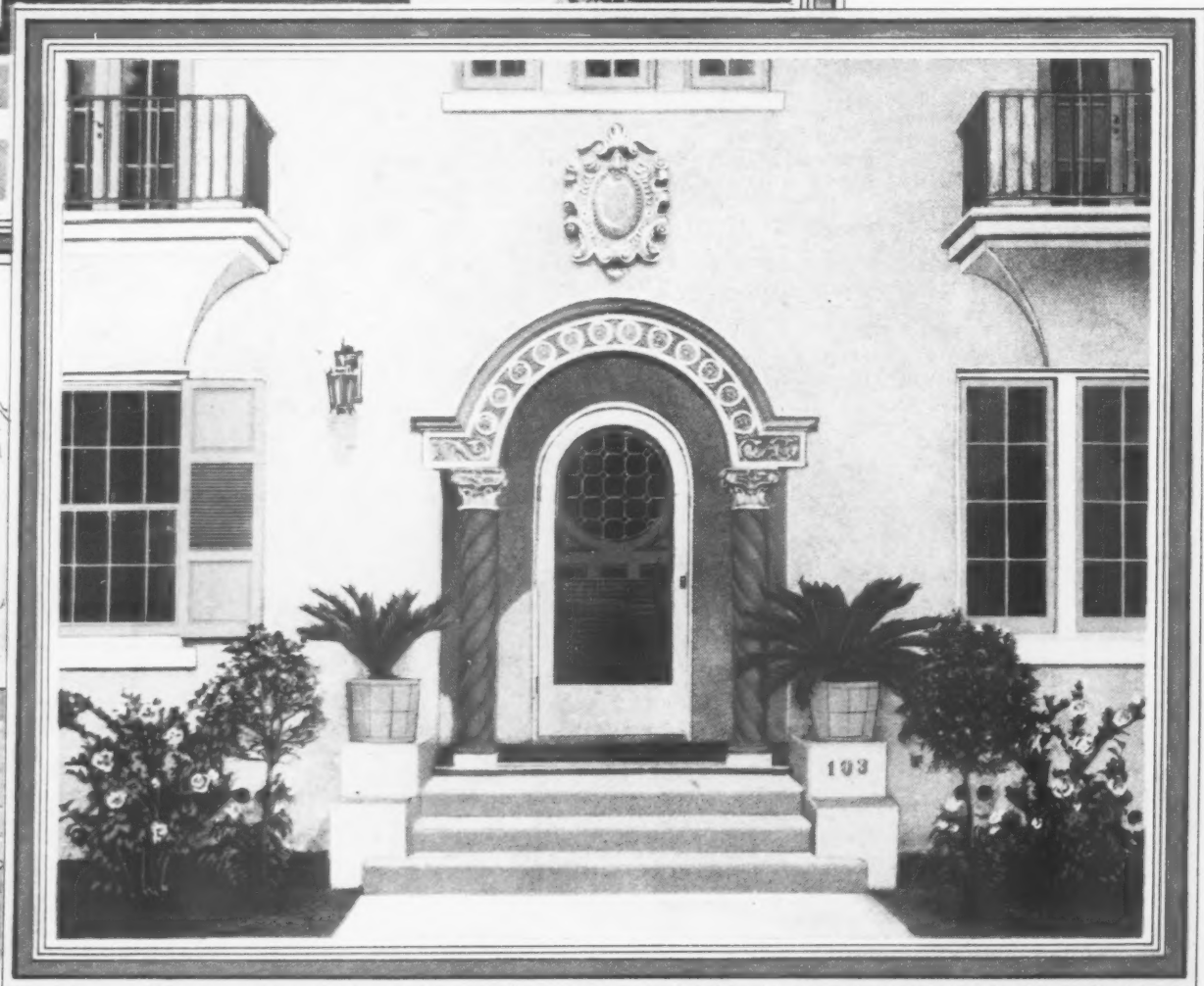
A SUBSTANTIAL home of brick construction containing six rooms and two baths besides the big octagonal sun porch. The main structure is 25x36 feet with a projection at the back for the service entry, and this gives opportunity for a second-floor balcony. The room arrangement works out very successfully as a study of the floor plans will show. Color sketch to right suggests a panelled wall treatment for the dining room.

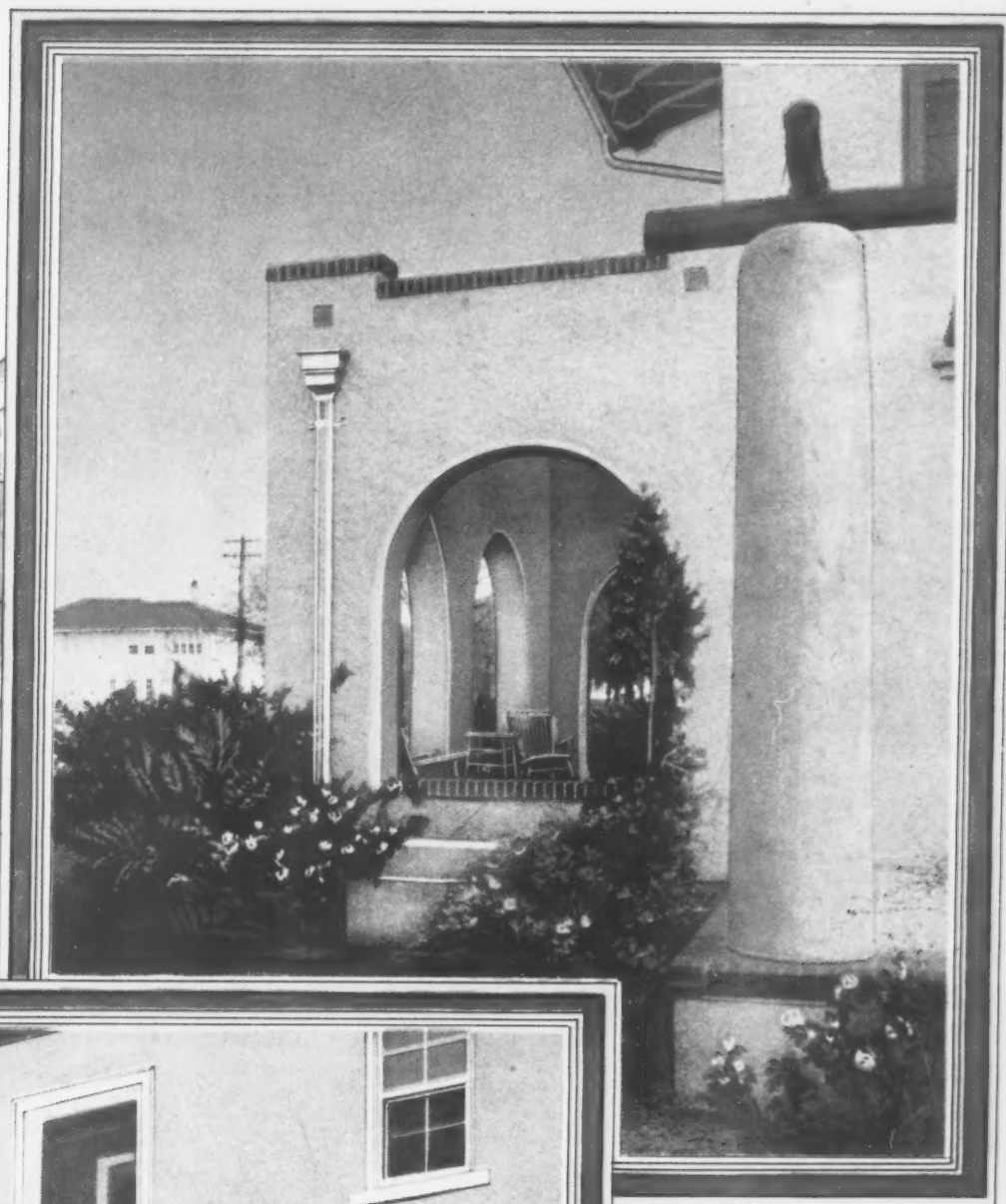






Photographic studies of two well handled Spanish entrances.

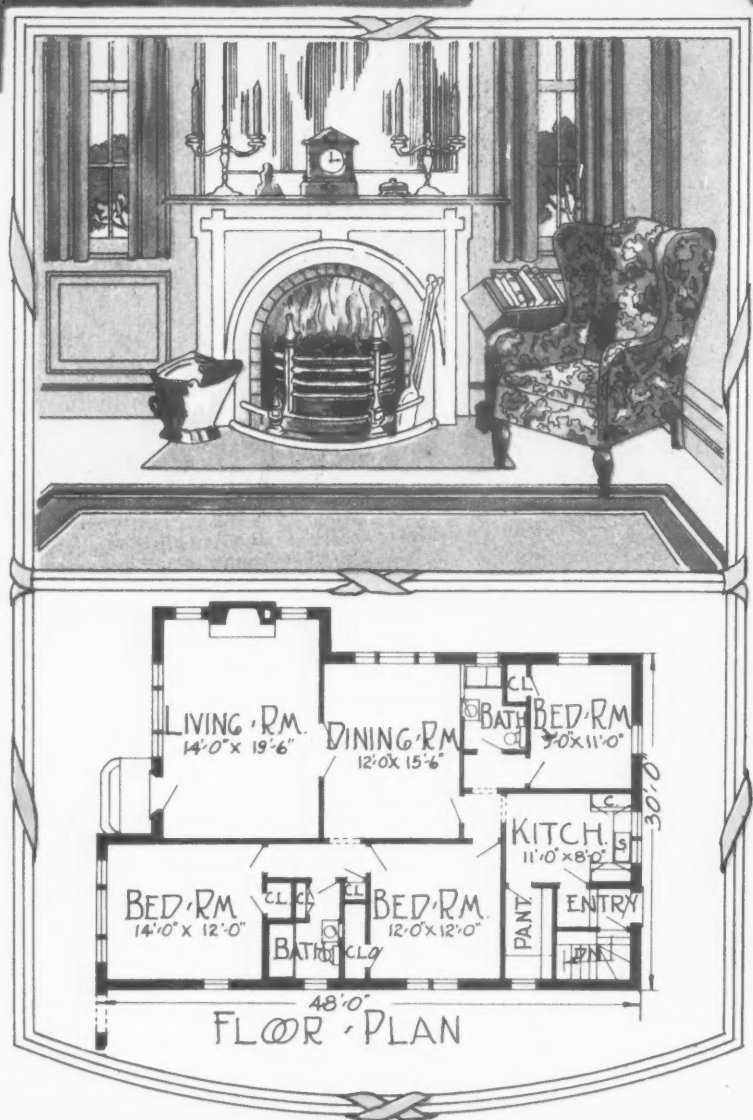
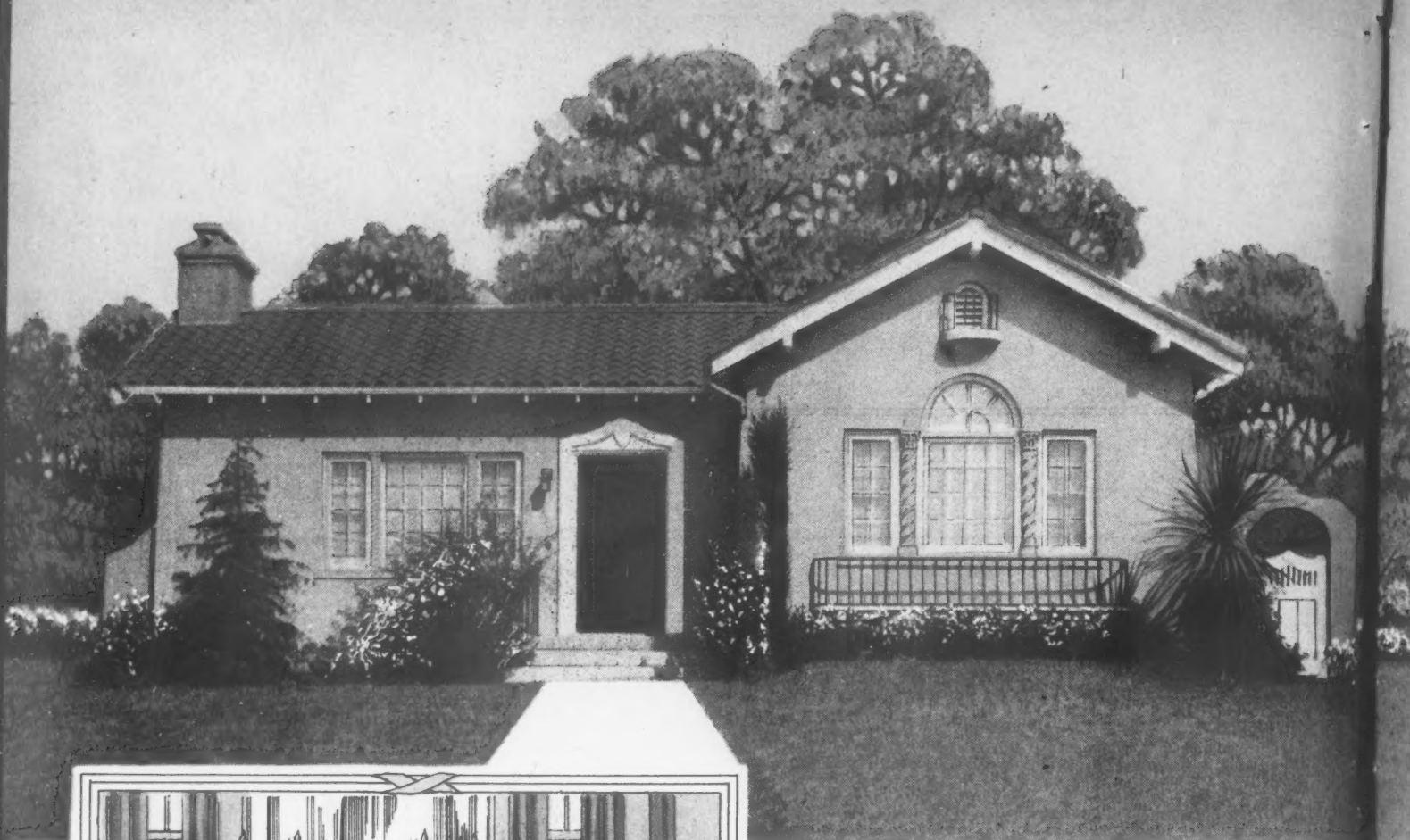




Authentic details for  
Spanish entrances.

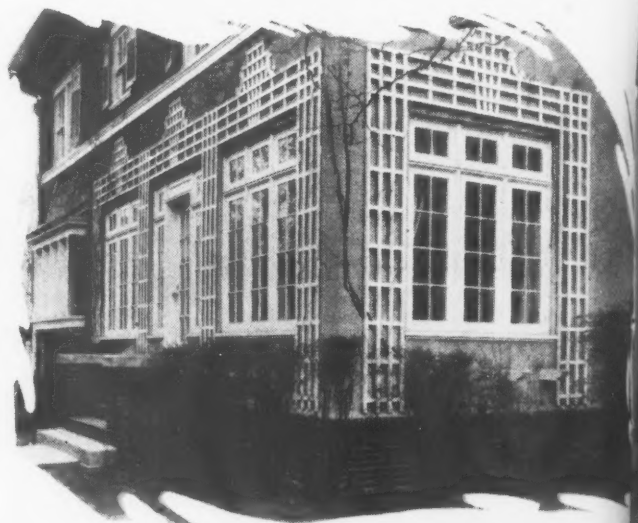




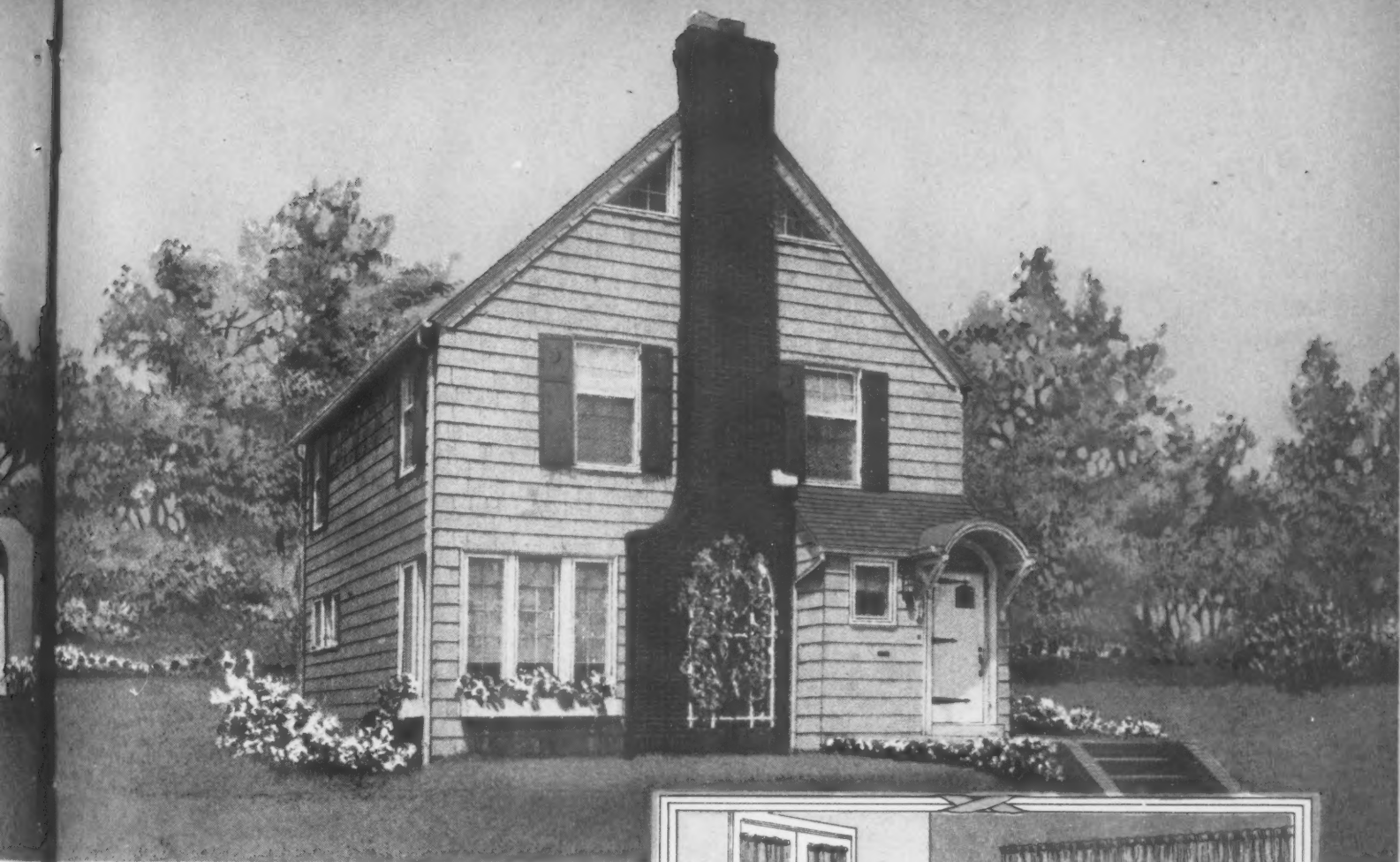


## The QUANTICO

A SPANISH bungalow of six rooms and two baths. The impression of extra width is given the front by building out the walls to include the service gate. The generous use of wrought iron work and a massive front door of special design are notable features. Color sketch to left gives a glimpse of the fireplace end of the living room.



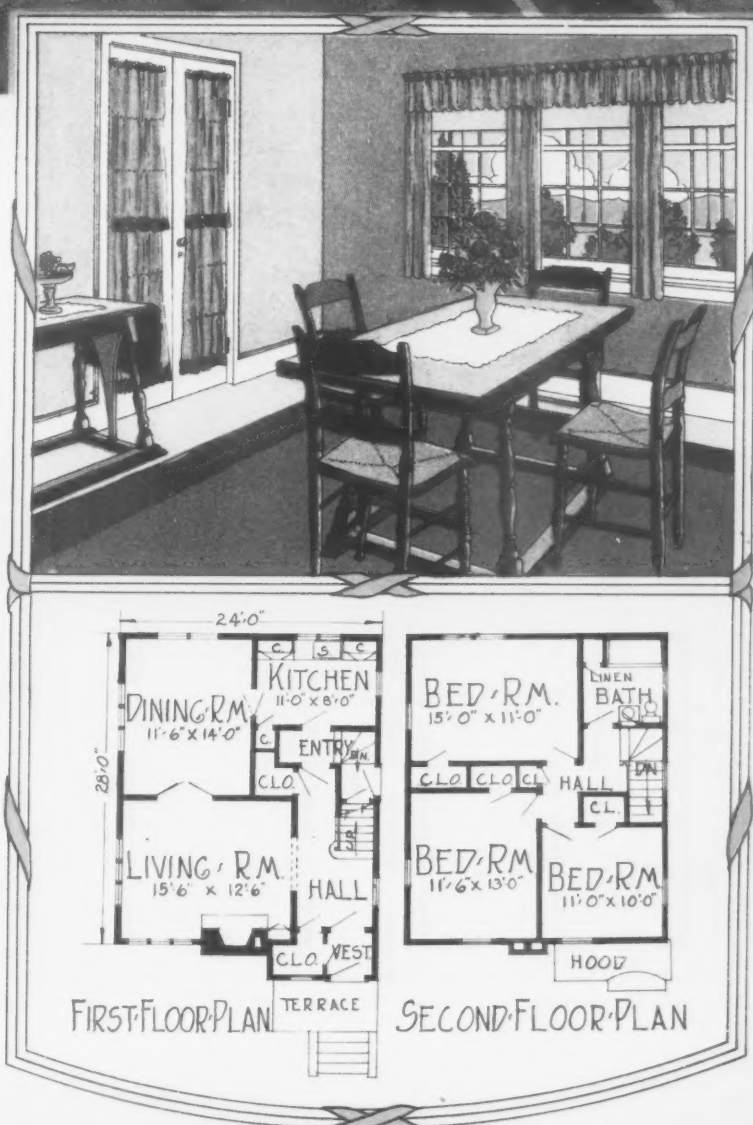
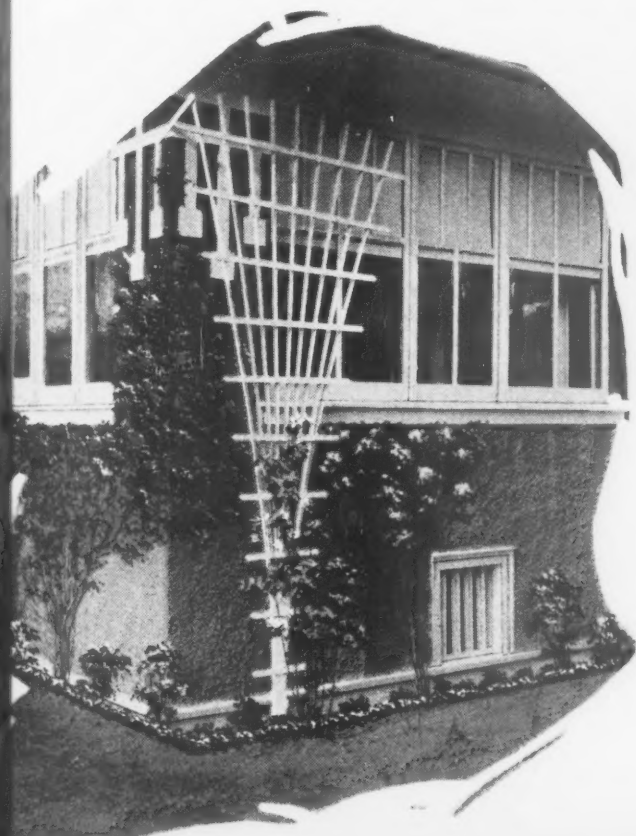


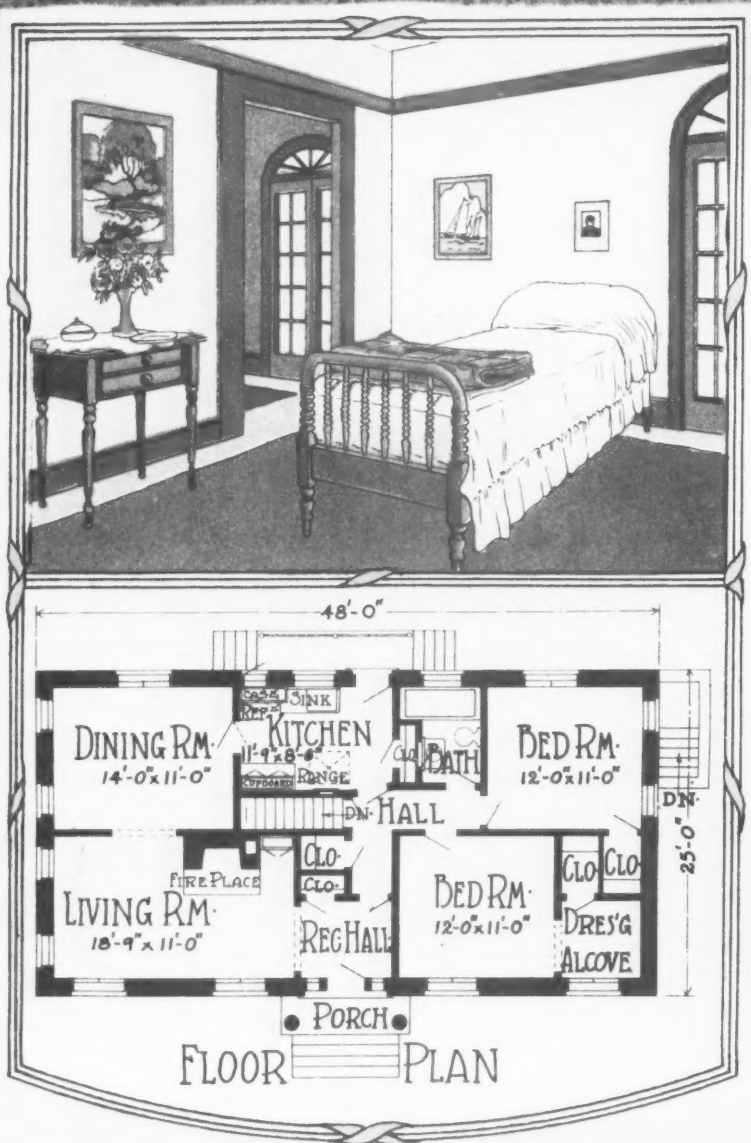


## The QUEENSTOWN

HERE we have a modernized Colonial, in other words, the old elements jazzed up with something new, particularly as in the front entrance vestibule and the triangular windows to light the attic. This house is 24x28 feet, six rooms and bath.

The  
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floor  
to  
room.





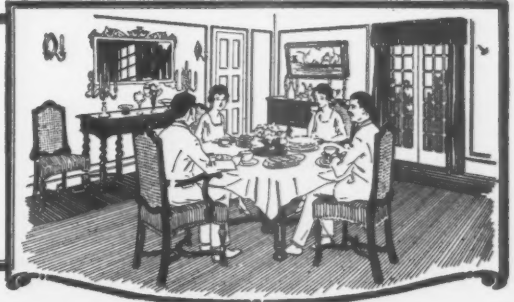
## The QUALITY

THIS brick bungalow shows the Italian influence in its long windows with half-circle heads. The plan is 25x48 feet outside dimensions, and five rooms and bath are provided. Color sketch to left shows a glimpse of the front bedroom with dressing alcove.





# OUR FRONT COVER HOME



## *Here is a Pennsylvania Dutch Colonial Home Designed in Perfect Harmony With Its Delightful Surroundings*

**A**LL of the advantages of location have been combined with the skill of the architect to produce the homelike effect which characterizes Our Front Cover Home, as pictured below and as shown in full colors on the front cover. Set in the midst of a group of fine old trees which make its site an ideal one for the true home lover, it offers remarkably pleasing evidence of the skill of the architect in the art of adaptation. No more appropriate design could be imagined than that which produces this charming house, blending so perfectly with its surroundings.

But a glimpse of this home is required to arouse a desire to settle here where comfort and contentment seem a very part of the atmosphere, certain that the interior will fully live up to the exterior promise. Nor will an inspection of the interior prove a disappointment to one whose hopes have been raised by this promise. As can soon be seen from an inspection of the plans on the four pages

which follow this, no less skill has entered into the arrangement of rooms and the provision of home comforts than that displayed in the outside features.

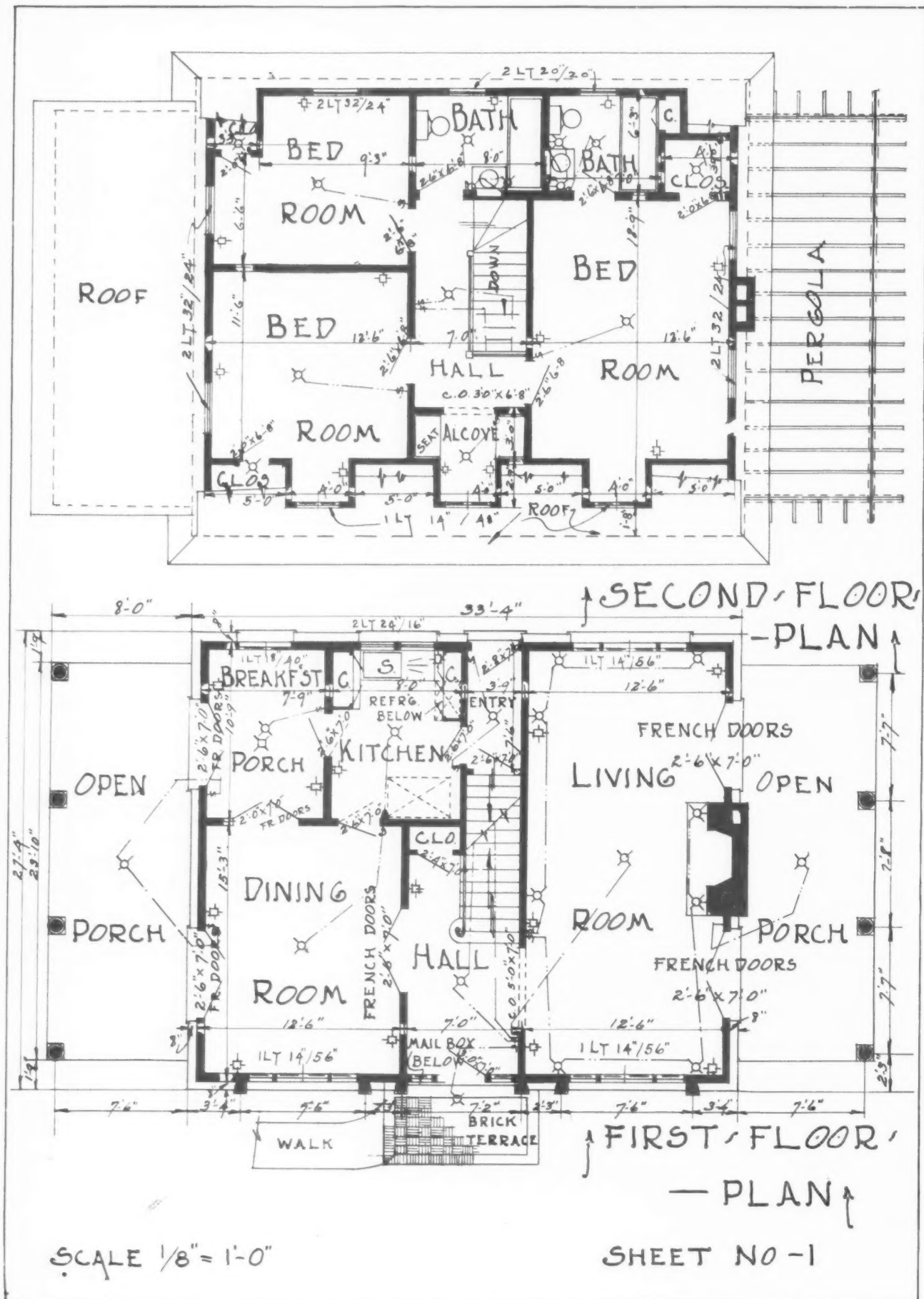
By the use of rough field stone in the lower walls this house has been most successfully tied into the ground upon which it stands, the roof with its low lines seem to cover the building in a snugly protective manner while the broad, open porches, with their column effect carried across the front also, invite one to rest in ease sheltered from the too warm summer sun.

Within there is a great living room with a fireplace which makes possible the cheer of a wood fire on long winter evenings and it is flanked by French doors which may be thrown wide in summer to admit a large portion of the fresh outdoor air. And then, besides the dining room and kitchen, there is a small breakfast porch where the intimate morning meal or family luncheon may be served in a flood of sunlight from ample windows.

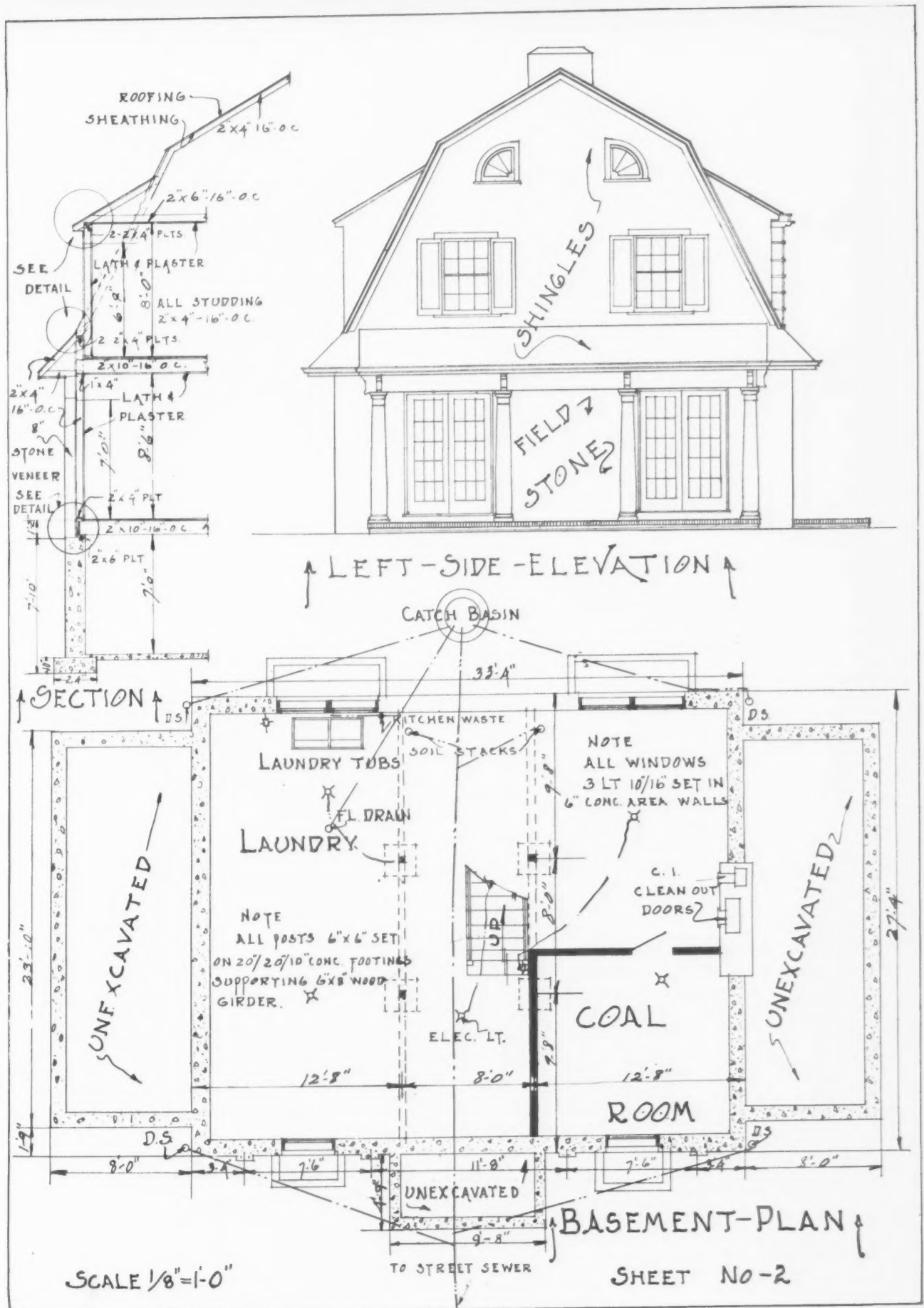


An Exterior Which Charms the Observer and Gives Promise of a Thoroughly Homelike Dwelling. The plans appearing on the four pages which follow assure one that this promise is fulfilled by the interior design of Our Front Cover Home.





Plans of the First and Second Floors of Our Front Cover Home Show Us an Arrangement of Rooms Providing a Large Portion of Comfort and Convenience with Attention to the Details that Are of Importance.

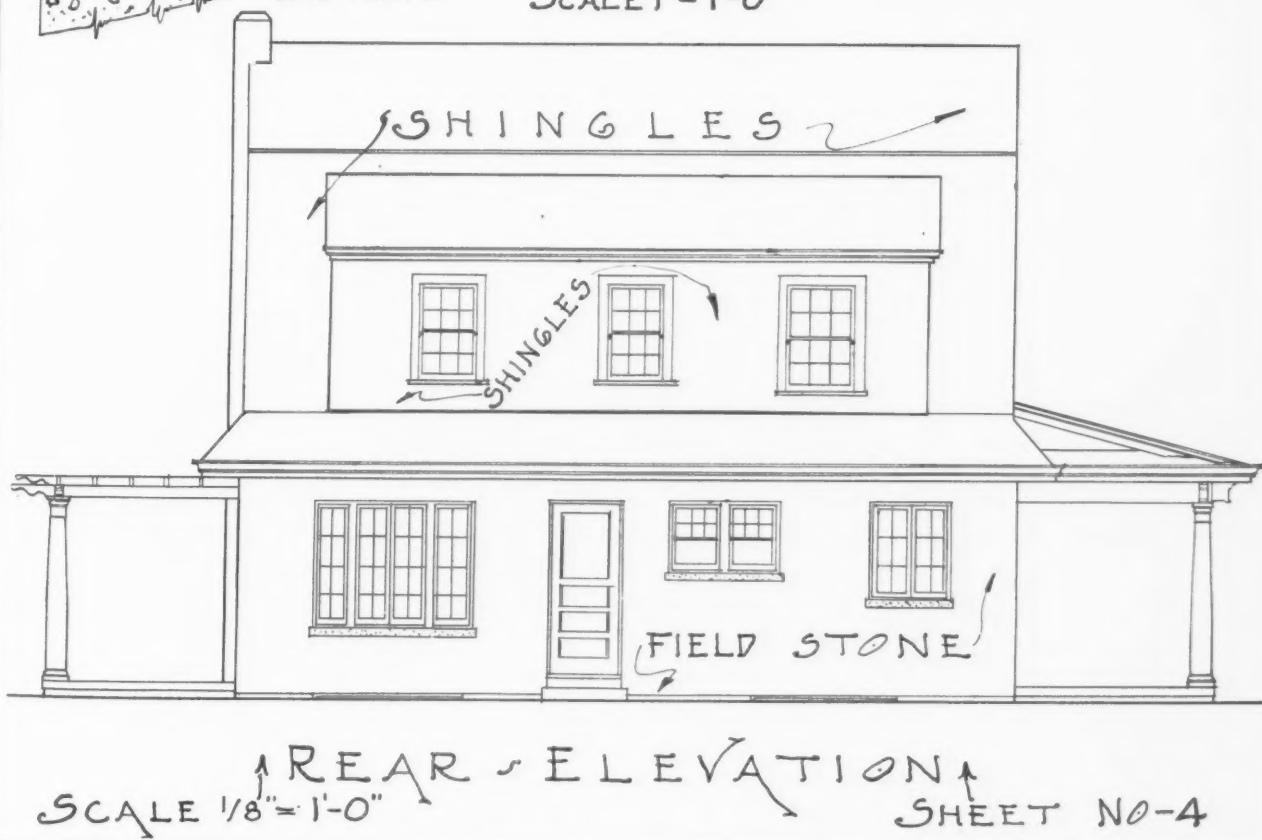
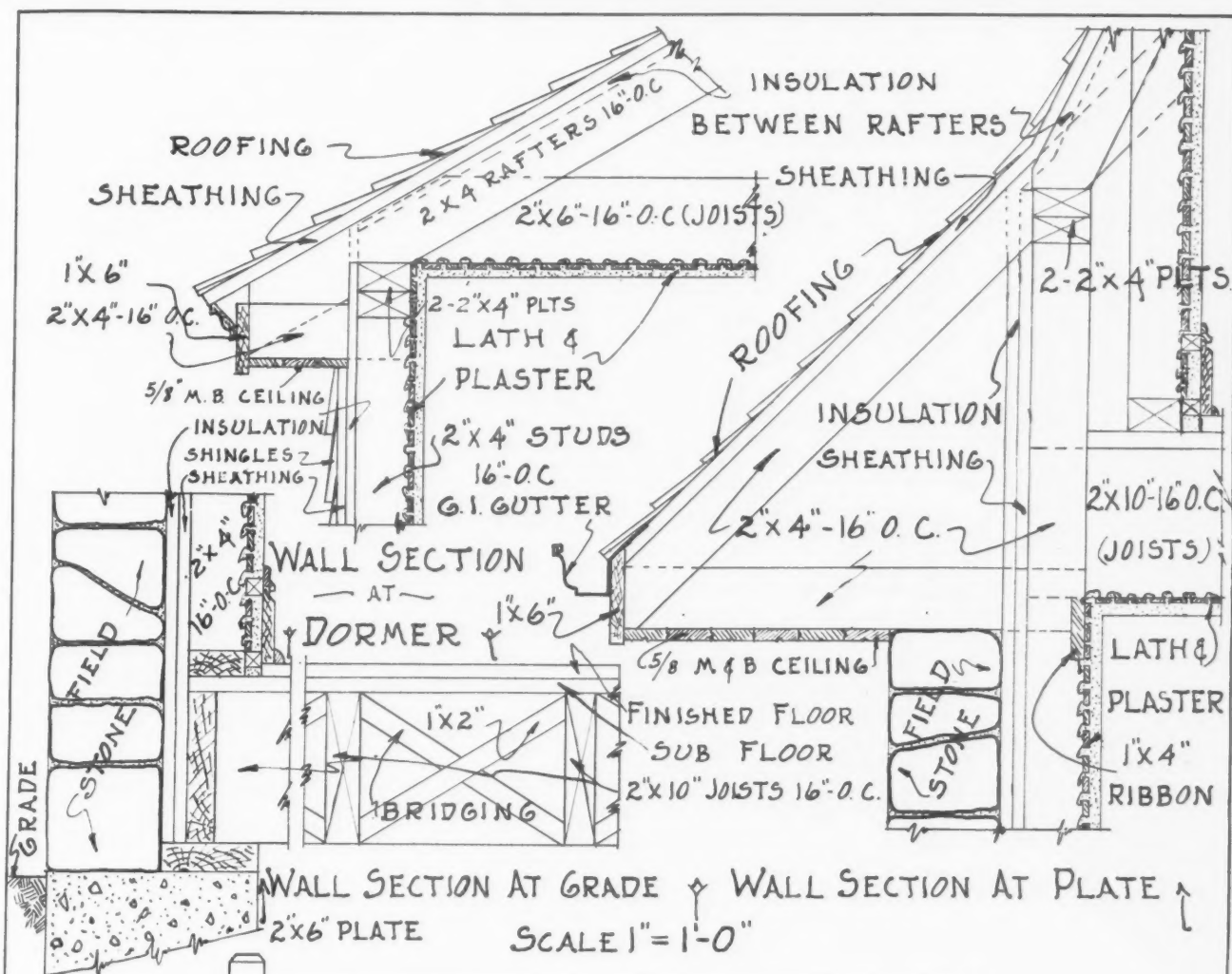


The Basement Plan of Our Front Cover Home Shows a Careful Separation of Coal and Furnace Rooms and an Opportunity for Utilizing Extra Basement Space. Above is the left elevation and a sectional sketch, while on the following pages are further details.



Front and Right Side Elevations of Our Front Cover Home Showing the Treatment of the Windows and of the Pillars Which Support the Porch Roofs and Are Carried Across the Front of the House.



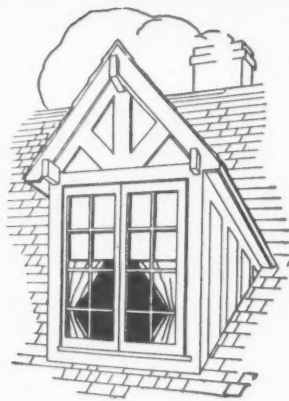


The Rear Elevation Is More Simple but the Section Sketchs Above Furnish Interesting Details on the Wall Construction, at Essential Points and the Insulation of Walls and Roof.



# DETAILS of HOME BUILDING

by V. L. SHERMAN  
Lewis Institute of Technology



## Detail 11—The Gambrel Roof and Others

**T**HE roof presents the most interesting portion of the house. Once, previously, a page was printed in these articles and the point of emphasis was the cornice. There was hesitation in discussing roofs in general because of two things. The first was a decided prejudice against cut-up roofs for small homes, and the second was a leaning toward mechanics in all roof work.

For the first I willingly admit I am prejudiced whenever I come on one of the many pretty houses with even "outlandish" roofs, roofs that are not only a waste of money but a waste of space. There is something fetching about such a roof, perhaps a valid excuse for its existence.

For the second I am ready to admit that stresses and strains as applied to small homes built with standardized timber do not call for a great amount of talk. It is really a question of proper fitting and enough spikes. To get in a last word, however, roof building is a long and interesting study from the mechanic's side.

Taking Fig. 1 you will notice six types of gambrel roof. They are all more or less in use, and the pitches and slope ratios are not confined to these six. Now in times past the gambrel roof was common over the full two-story dwelling, and while we now see it used to exalt the one-story and as brought from the Pennsylvania settlers, we can trace it back to those who built for a roomier attic. To the Dutch it was usually a loft merely. But these reasons for its existence are no bar to use in any way that is fitting.

Shifting the various sections of the gambrel as shown in Fig. 1 onto the side elevations of a house is an interesting game. There are great differences in their suitabilities. But the last one, Fig. 1-F, is the black sheep of the family. It has pretensions only, and really is an old gage for a Mansard roof. But the thing is used regardless of its antecedents, though it should be impounded.

Fig. 2 is a diagram of framing. At A notice that the ceiling joist is above the purlin, giving more ceiling height than at B where the joist is below the purlin. This is a fair example of the mechanics of the roof as applied to building. Without entering too far into it notice that at A the ceiling joist ties up the lower side of a low pitched roof and forms this upper roof into a unit load pressing down on the purlin. This weight is supported by the rafters and studs of the lower roof which must take care, too, of applied stresses that are other than vertical.

At B the ceiling joist ties the upper end of the lower rafters much as the truss shown in Fig. 3, and the low pitched upper rafters have a spreading effect on the purlins as well as a load. For this reason it might do to lay the purlin timbers broad side down since more of the upper

roof weight goes into horizontal pressure.

Ordinarily rafters are well enough tied at the base and provided with collar beams so that there is more need to use judgment in considering the roof load on the rafter itself than on the wall. Light rafters will not carry unreasonable load without sagging, and after this has occurred the cut-up roof will show more leaks per year than there are rafters. An excess of work on collar beams and short studs will have to make up for the scanty weight in the rafter.

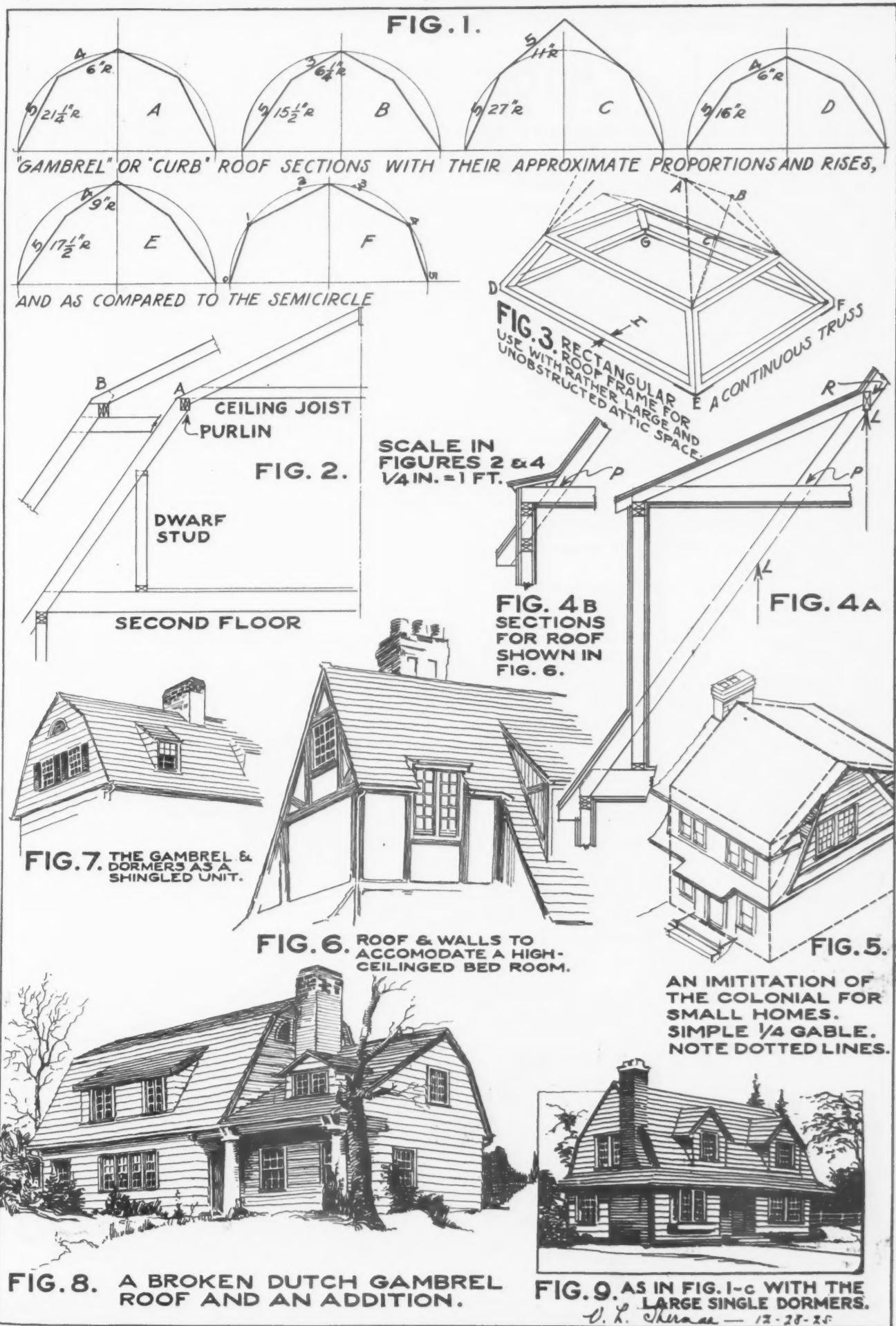
Of course the pitch of the roof has most to do with the load of the roof on the rafters and of the entire roof on the wall plates, but taking one consideration with another, and considering the amount of publicity that roofing is getting, I should say give it a chance to make good by using a factor of safety of about 25.

Fig. 3 is sufficiently exaggerated to give the impression of a continuous truss that will stay in place and support a decked roof, a hip roof, as shown at A, the old gambrel, as shown at C, or the extended hip, as shown at B. There has always been an association in my mind between this last type of roof and the old thatched roof, thatched in the form of a hip but with just enough left of the gable to air the loft. They are fascinating. What was meant by the figure was to show that regardless of its ability to carry loads within itself or above itself, the whole structure depends on its integrity. If one of the four corners fails, or the plates begin to spread at the sides, as at H, then it will surely disintegrate. Such roofs must be carefully prepared.

Fig. 4 and Fig. 6 are used for one particular reason. Noting how houses fall into classes or types generally, one comes to the conclusion that floor spaces are fitted more into exteriors than walls and roofs are built about rooms. Allowing for the popularity of certain floor arrangements and their typical exteriors we still believe more builders should use the roof of the home, when they need to, to satisfy their best floor plans. There is nothing unusual in the roof and walls of Fig. 6.

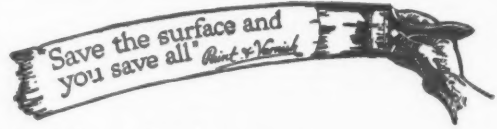
Fig. 5 is not so bad in its way, probably about 18 feet by 24 feet, but allowing for volumes, areas, paint, trim, work, etc., a larger house of plainer drawing might have been had for the same money.

Gambrel roofs will associate with roofs of other types. In Figs. 8 and 9 you may see two gambrels of entirely different sorts, both with the presumed attic floor in full use, with plenty of dormers, both over single story walls, and neither very badly hurt. Charm in a roof lies more in its apparent capacity for covering requirements.





# SAVE THE SURFACE DEPARTMENT



Written, Illustrated and Edited by the Headquarters  
Staff, SAVE THE SURFACE CAMPAIGN

## False Economy

**"B**UT I did clean the wall myself and the spot remained."

"Did you use soap and water. You know you can wash a painted wall."

"Yes. Mr. Jones, the real estate man, told me to use soap and water, and I scrubbed the spots thoroughly with soap and water myself, but it only seemed to make them worse. You know we only bought the house from Mr. Jones last week and he assured me that it was well built and that I would be thoroughly satisfied with it.

"That's why I was willing to pay considerably more for it than I had expected to pay for a house. I certainly am

not satisfied with a house that develops unsightly spots on the walls, which I am unable to remove, a few days after I buy it. Fortunately I have not paid him for it yet. And I won't pay him until those spots are removed.

"After a great deal of palaver, and after I had shown him the spots and he had tried to, and admitted that he could not remove them, he finally referred me to you as the builder. He said he could not understand it, as he knew you to be a thoroughly reliable builder who had never been known to use anything but the best materials throughout in all your houses."

"Thank you, madam, our firm has had very few com-



Well Finished Walls and Woodwork Are an Investment Which Pay Big Dividends Both to the Builder of a House and the Buyer Who Makes It His Home.

plaints from real estate agents. We will be pleased to do the painting of the house over for you. You know, accidents will happen. Perhaps we did receive a batch of paint which was not up to specifications. I will investigate the matter. Meanwhile, you may rest assured that your walls will be properly finished. We make it a rule never to permit the owner of one of our homes to be dissatisfied."

"Thank you very much, Mr. Brown. I'm not sorry I bought the house, after all. I think you have been very fair in the matter and I shall certainly recommend the firm of Brown & Brown to any of my friends who intend to build."

"Thank you, madam, it is our policy to build real homes, not just houses."

The above conversation is typical. Whether Mr. Brown knew that the plaster of the walls had not been prepared to receive paint, and that, as a result, the free lime in the plaster had caused "burnt" spots in the paint, any reliable builder would have acted in the matter very much as Mr. Brown acted. He could not afford either to sell a house that proved defective in any particular or to let the purchaser think that the old reliable firm of Brown & Brown did not know how to decorate their houses.

The truth is, that in this particular case Brown & Brown knew that they had painted this house in a hurry, but the real estate agent had pressed them for time more than usual, for a "quick turnover." Consequently they had "taken a chance" and "rushed the painting job" with the inevitable result, the job had to be done over at considerable expense.

Nothing but a complete removal of all the old paint and a thorough priming before applying the first coat would be possible in this case, as Mr. Brown well knew. He also knew that this would cost the firm of Brown & Brown a good deal, but not as much as it would cost to lose the reputation of building good houses. There is no alternative for any reliable builder. Unsatisfactory work has to be done over. In this case the lesson was costly, but it taught Brown something which will save him time and money in the future.

The lesson is obvious: it does not pay to "rush" a building merely to make a quick sale. Equally important is the use of nothing but the best materials.

The painting contractor is probably the last contractor to leave the house which is in course of construction. Therefore, he is the last person between the builder and his agent, and the purchaser. If anything goes wrong with the house, rest assured that it will "come back" upon the builder eventually. If he be reliable, he will be forced to "make good" on his houses. It will pay him, therefore, to use nothing but the best materials in his painting contracts.

Economy is one of the best qualities a builder may possess. But there is such a thing as false economy. The builder who uses "cheap" materials will find that he will pay dearly for them in the long run. This applies particularly to such products as paint and varnish. Most builders know from experience just which brands of paint and varnish are going to "stand up" on a particular piece of work.

For those who are new at the game of awarding painting contracts, there is no better guide to the purchase of good paint and varnish than that of the reputation of the manufacturer of the product. All builders know which are the reliable paint and varnish houses. It will pay them to purchase materials for painting contracts only from these houses. They may rest assured that no paint or varnish manufacturer has made a name for reliable products unless he has the "goods."

While good paint is a very durable material, poor paint is very perishable. The higher cost of the former will always be more than offset by the shorter "life" of the latter. In this connection, it is well for all builders to bear the following points in mind.

Don't attempt to hasten painting merely to make a "quick sale" to "economize" by using paints and varnishes of low quality or to make one or two coats "do" when two or three coats are necessary. These methods will prove costly in the long run. Use good materials. Do the job right and you will have no complaints a few months after the job is completed. It pays to paint thoroughly and well.

## Variety in Painted Brick

**C**HIEF among the reasons why brick is often painted is that paint brings color variety to this material.

Of course there are a number of technical and practical reasons why many people prefer to have their brick homes protected with paint but it is safe to warrant that color advantages play a strong and prominent part in influencing their decision.

"Can brick be painted, though, and just what effects may be obtained?" many people ask.

To the first part of the question the answer is, of course, "yes," while the second half requires considerable elaboration.

The fundamental principle underlying successful painting is to adapt the type of finish to the material used. So, although brick may be painted nearly any color of the spectrum, it is wiser and in better taste to paint brick as brick and not try to make it look like something else. It is conceivable that under certain conditions a brick house might be painted white or cream with green trim, but since that color scheme is irrevocably associated with Colonial houses with clapboard siding, it is not in the

best of taste to advise this color scheme unreservedly.

Brick lends itself to rich mellow color. The most pleasing effects found in tapestry or variegated brick can be



Brick Permanently Old and Brick Perennially New. Paint makes the difference.

achieved with paint. Here is one. A light tan ground color is put on the surfaces to be painted. When this is dry a finishing coat of dark brown or red is then applied and while the paint is still wet, a sponge is rolled over the surface. This will lift off some of the darker paint and allow the light ground color to show. Other pleasing color schemes are as follows: light red and dark red, orange and gray, or cream and dark gray.

An effect of multi-colored brick is obtained in this way: instead of one finishing coat, two are used, as, for example, a light cream ground with dark gray and venetian red for finishing coats. This combination gives a bluish cast to the finish. An orange ground over which dark red and brown are used also gives a rich and pleasing effect. The two finishing coats should be applied in spots over the surface and blended while wet.

Many people use "brick color" for painting brick. This is a combination of venetian red and French ochre. The

lining-in is done with white. Although this finish is in perfectly good form, it is stereotyped. So long as paint is used its individual color advantages may as well be capitalized.

Preparation of the surface is as important in painting brick as in painting wood. If any mortar has come loose and washed out the damaged places should be patched with new mortar or cement. Bricks should never be painted unless thoroughly dry, nor should any painting be done in cold weather. Small defects in the brick surface should be corrected with putty. If the brick has been painted before the priming coat may be omitted—otherwise three coats should be used—the first with an excess of oil.

One need only compare an unpainted with a painted brick house to understand the preference many people have for the latter. Besides, paint acts as a waterproof sheath over brick, which otherwise absorbs water in quantities that make such protection important.

## Ceiling Decoration

**D**ECORATION is not entirely a matter of aesthetics. It has its practical aspects as well. In their efforts to include everything in the decorative scheme, many decorators have recommended the use of colorful ceilings, plain or patterned. The premise upon which this is based is entirely admirable, for too many ceilings spoil the appearance of rooms because of their cold, unrelated tone, but, like many other things, the dictum must be modified if it is to be practicable. The ceiling color has a marked effect upon the lighting of a room, and, incidentally, upon the amount of the home owner's light bill. This is an important matter to consider, for every cent that the builder saves his clients upon the upkeep of a house is returned to him in the shape of increased confidence. To condone a faulty decorative scheme—one that will cost the owner both eye strain and unnecessary lighting bills—is almost equal to putting in cheap fixtures that will be a constant source of irritation.

There is a reason for the old white ceilings. White reflects more light than any other color. Dark colors absorb light. Since most people prefer bright, cheerful rooms to those that seem in a perennial twilight, extremes in ceiling decoration are apt to prove a boomerang to the builder who allows them to be incorporated in his house.

It is better to take a middle course. Between the Scylla of over decoration and the Charybdis of ugly canopies of unrelated white there is a safe passage. Light tints of colors that are in accord with the rest of the decorative scheme give an efficient lighting background and, at the same time, harmonize with the color plan of the room.

The glaring white ceiling is usually out of key with the average room. Any tint, however, that contains a large amount of white will not materially hamper the lighting arrangements. If a living room is finished in blue and gray, for example, a very pale gray or blue ceiling would look much better than one of harsh white. In using grays, however, be sure that they are not made by mixing black with white paint, for this combination has low reflectivity. A gray made by mixing red and green with white makes a warm gray that has a relatively high coefficient of reflection.

Can stone color, ivory, ivory tan, primrose, lichen gray,

green, buff, tan, pale green, bright sage green, pale blue, sky blue, shell pink, apricot, coral tine, lavender, canary yellow, powder blue, peachblow are but a few of the tints that make the ceiling more beautiful without ruining it as a reflector.

Gloss paints are not good for ceiling work, for they have the property of giving reflections of the light sources. Flat paints are excellent, since, in addition to their efficiency in reflecting light, they are easy to clean and keep clean.

A small amount of decoration may be used on the ceiling, but here again, caution is the best policy. A narrow border in color placed about a foot from the wall line is sometimes used effectively. This treatment adds variety to the decoration and aids in "tying down" the ceiling. If the room is very large and the ceiling expense unbroken a so-called panelled treatment may be used successfully. The ceiling is broken up into panels with a narrow stencilled border. If the lighting fixtures hang from the ceiling the border may be placed about them, too. All of these suggestions lend color and distinction to a ceiling without damaging its true function.

One of the best ways of decorating the ceiling is to use a mottled or sponge two-toned finish there. Mottling in two tones of the same color is to be preferred.



Where a Tinted Ceiling Would Improve the General Appearance of the Room. The dark panelling and mottled walls set a key with which the white ceiling is out of harmony. A warm buff would be more appropriate.



# Steel Scaffolding for Economy and Safety Insurance

**S**AFETY and economy are the two outstanding points which recommend steel scaffolding to the builder. The first cost is of course somewhat higher than for the old-fashioned wood scaffold but, with the price of lumber where it is and the waste of good lumber involved in putting up and tearing down wooden scaffolding and with the saving in labor made possible by the use of steel scaffolding, the difference in cost is soon more than overcome.

In the matter of safety there is no comparison. Steel scaffolding brackets are tested to carry excess loads, a one-ton test being the common practice, and they give an absolute assurance against failure. This is a safety margin which appeals not only to the workmen who intrust their safety to the scaffolds but also to the employer for whom they work. And it is an element which likewise spells economy for the contractor, because it eliminates the liabilities incurred through injuries to workmen, due to the failure of scaffolding.

In addition to steel trestles for carpenters, millwrights and general utility, and sectional steel scaffold for bricklayers, plasterers and decorators, there are three general types of steel scaffold in use. These are the bracket for carpenters, the bracket for stucco workers and the shingler. While these names are descriptive it does not mean that the first two are confined solely to the work named.

The first two types are very similar, the difference lying in the method of attaching to the wall. The so-called carpenters' bracket is attached by clamping to the studding while the so-called stuccoers' bracket is attached by means

of nails. As can be readily seen stuccoers' brackets can be used for both kinds of work but each type is particularly designed for the purpose its descriptive name indicates.

Both these types are collapsible and can be folded into a small space for easy transportation between jobs. When expanded for use they have, roughly, the form of a pyramid with a triangular base. This base rests against the wall with one corner at the top. It is at this corner that the bracket is attached. Here, in the first type, is the clamping device and in the second type the slots or holes for inserting the nails. Ordinarily, four 10-penny nails are sufficient to hold the bracket with perfect security. The two lower legs of the triangle simply rest against the sheathing.

With these brackets a special corner bracket is available which is designed to project directly from the corner of the building instead of at right angles to one wall. This makes it possible to extend the planking around the corners so the workmen do not have to jump or step over a space around the corner. This is an important point in eliminating the danger of accidents.

The shinglers are small clips which usually are attached to the roof by hooking onto nails under the shingles. They are made in styles for both wood and composition shingles and can be removed without raising the shingles and moved to a new point on the roof.

All of these brackets are made of high grade steel which assures dependability and makes them practically indestructible. Once provided, it will never be necessary to replace a bracket unless it becomes lost.



Steel Scaffolding When Used in Any Type of Construction Work Spells Economy for the Contractor and Safety for the Workman. The advantage of corner brackets is clearly shown in the photograph, the scaffold planking running clear around the corner of the house.

# Period Design in Residential Electric Fixtures

By C. G. MORRILL

**I**N early colonial days our forefathers illuminated their homes with candlelight and rush light. There were imported from the old country designs contemporaneous with Sheraton, Hepplewhite and Adam for the beautifully simple sconce, candelabra and candlestick, to carry the hand-poured candle. In and near New York the Dutch and Flemish influence was common and in the South many examples of the beautiful French crystal work were to be found.

With the development of the whaling industry came lamps and chandeliers utilizing sperm oil as an illuminating agent. In these the early Colonial simplicity persisted.

So existed the first period types of lighting fixtures in America. There followed the advent of "coal oil" and illuminating gas and the final adoption and extended use of electricity, the most efficient method of lighting so far discovered.

Purely mechanical in treatment, a product as well of the heavily decorated Victorian age, neither the coal oil fixtures nor the gas fixtures gave us anything in the way of real beauty in home lighting. Early electric fixtures followed the old familiar cross arm design employed in gas lighting and the few service brackets used were of the "stiff arm" variety. A lighting fixture was all that could be desired providing it satisfactorily held that new mechan-

ical wonder—the electric bulb. Those of us who were brought up on oil lighting or even gas lighting were charmed with the splendor of the new dazzling light, ready at a touch of the finger. The fixture that held the bulb was of little consequence for the light itself satisfied com-

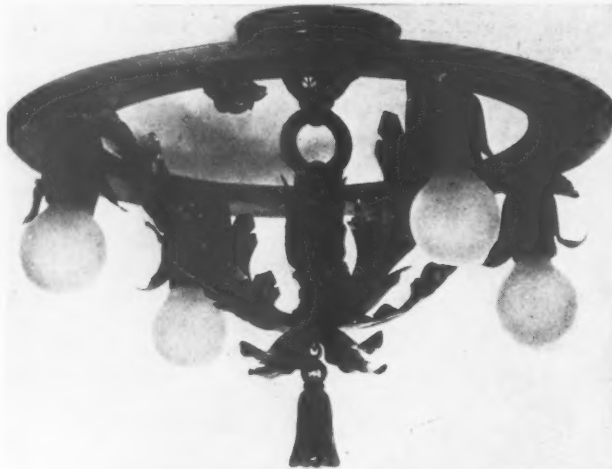
pletely. This attitude is found even today in country districts where the long arms of the power companies are just reaching. It is not an uncommon experience to find 100-watt lamps, unshaded, suspended before the squinting eyes of a prosperous, back country farm family.

However, since the conduct of electricity through a wire did not present such mechanical difficulties as that of gas through a non-leakable metal tube, there rapidly came to the fore in electrical fixtures, scroll arms, flower effects and what not. Metal was tortured in every conceivable shape by prolific designers seeking ever to find the popular number

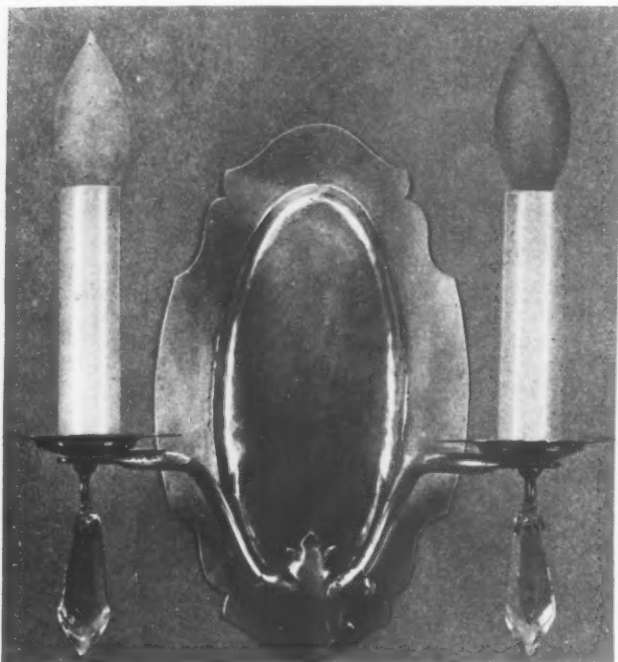
that would sell. Showers, stove-leg arm effects, pan types, all ran riot, and whatever was the thing was manufactured and sold.

True, we were dealing with a new force in lighting and it is charitable to assume that designers were trying to express the spirit of electricity, to give the new energy an artistry all its own.

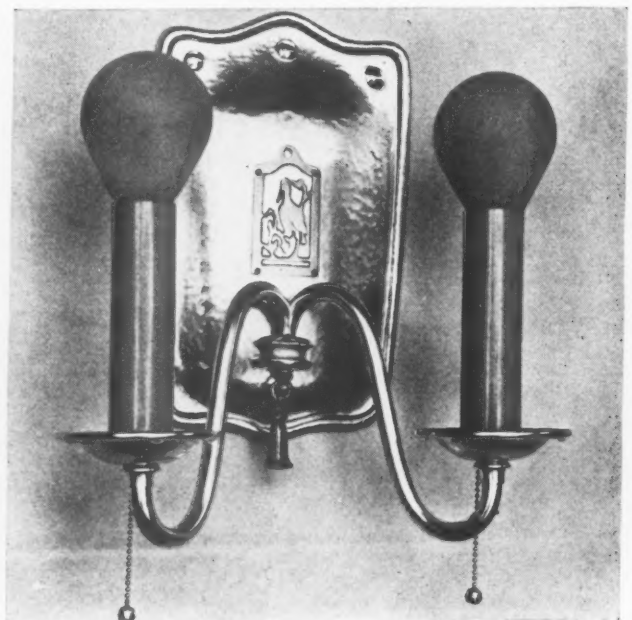
In recent years American women have been developing



A Ceiling Fixture of the Spanish Type, Appropriate for the Modern Home Where Low Ceilings Have Replaced the High Ones of the Days of Gas Lighting.



A Wall Bracket Which Is a Reproduction of the Pilgrim American Type.



Another Wall Bracket Is of the English Style Which Is Now So Popular.



Most Beautiful and Practical Effects Can Be Achieved by the Proper Selection of Lighting Fixtures Made in Period Design to Harmonize with the Style of the Home and Its Furnishings.

the home to the point where it is much more than a roof and four walls devoted to the art of cooking and the raising of babies. Comfort, and, above all, comfort with beauty, is demanded and insisted upon. Their own operations and investigations conducted through their own clubs and magazines, literally forced all designers of home-making materials to take account of their product and reconsider its design.

Furniture manufacturers gave up trying to design a typically American period and copies of old Sheraton work, Adam effects and Hepplewhite charm became predominant. Old lines from the old masters, beauty that had lived through the centuries, was substituted for designs made to sell. Rugs, draperies, wall coverings and architectural designs for the exterior jumped back to the old permanently beautiful period lines.

It is well to note that it was not merely that the talking of "period effects" had become a fad, but rather an admission that in home building we had not been able to create a new beauty to supersede the old. The old, preserved in line and reproduced to meet modern conditions, was our only source of real satisfaction for the new American home-maker.

In the lighting fixtures this demand came first from large public buildings where an expert schooled in the complete job wished to carry out a period scheme of interior decoration. Of necessity the fixtures had to harmonize. Soon the larger and more pretentious homes, treated by expert interior decorators, called in fixture designers to manufacture special fixtures suited to each individual room treatment, giving at the same time sufficient illumination.

Due to the fact that good fixture designers were rare and that all such were extremely

busy on this class of work, it was not until recently that any attention was given the lighting equipment for the average home. There are now available, however, candle effects after our early Colonial lighting that copy closely the wax taper. Splendid early sperm oil designs have also been preserved. Sconces and candelabras have been copied substituting the electric candle for the flickering candle flame, old fire screen outlines and chair back outlines of Sheraton

have been used to produce delightful brackets. The line and leaf from old Colonial urns have been successfully carried through a series of modern numbers. The solidity and massiveness of the Flemish has been woven into a number of available home lighting units. The beautiful crystal work of Marie Antoinette's time is easily adapted and the old Italian and Spanish metal work give us a new note of striking beauty. Period line in all its charm has come again to the American home in its lighting equipment. Due to American ingenuity in mechanical details, to American production and distribution methods, such design imposes no additional cost over the old ornate quality group of lighting fixtures. A few of the more prominent manufacturers of fixtures for average American homes have become distinguished for special application of the period idea. These have specialized on period designs in hammered and hand-wrought effects and have applied Sheraton line to an excellent group of designs, manufactured a number of excellent sperm oil reproductions and unusual old lantern effects.

There is available then for the home-maker a period type fixture that will harmonize with the furniture, rugs and draperies already in place. The complete ruin of the thoughtful effort carried out in beautifying a home, by a grotesque lighting fixture, is no longer necessary.



The Colonial Lantern Is Very Effective in the Hall of the Modern Colonial Home.



## Colorful Stone Flagging for Walks, Terraces and Floors

THERE was a time, not so long ago, when the word "slate" brought to mind dull gray-black roofs and the school blackboards on which we solved our youthful problems, but nothing more. Today the word is acquiring a new meaning which presents an entirely different picture to the minds of those who are following the best developments in building, landscaping and decoration.

There has been, of recent years, a decided change in buildings and building design, based on changing demands, the high value of building space, a new conception of the value of quality and permanency, an increased knowledge of products and their uses and a new artistic taste. New materials have appeared and old materials are being used in new ways which were unheard of until recently.

Not the least conspicuous of these changes has been the demand for color in both buildings and landscaping which has already gone far toward making our environment more cheerful, attractive and interesting. Color is used today with great freedom, not only in interior decoration but also in exterior walls and roofs. Perhaps the most conspicuous evidence of this tendency is seen in the colorful stuccos, awnings and interior walls of the now popular Spanish style of architecture.

Nor is this color demand confined to the house itself. More and more every day the landscape architect strives to include as much color as possible in his work. Because of the short life of any one species of flower it is necessary to arrange the planting so that there is a constant rotation of blooming throughout the season. Even into the late

autumn interest is retained by using the more hardy plants, planned in advance to provide varieties which blossom plentifully until the severe frosts call a halt to outdoor life.

In the past, but little has been thought of acquiring color value in the permanent features of the garden, the walks, terraces, fountains and seats. Now, however, there has come a radical change in the vogue which formerly called for straight, plain walks of concrete and seats of gray stone or stiff iron painted a dead black or dull green. Colorful materials have been provided for these features which not only add the color afforded by the various plants during the growing season but carry over their touch of color and warmth through the cold winter season.

Prominent among these materials is slate flagging. Not the dull slate of our earlier memories but slate of warm, beautiful coloring which lends itself easily to a diversity of treatment and effect. In the use of this flagging it has been found that a charming informality can be achieved by laying the walks in curving lines and irregular pieces. Sometimes the pieces are jointed with cement, again they are laid with spaces between in which grass is not only allowed to grow but is actively cultivated for the aged effect.

Often this idea is carried still farther and stepping stones are laid with even wider intervals which provide the most radical departure from the old conventional custom. Large estates particularly contain numerous walks of this kind, not only for utility but for the decorative effect which they lend. A large flat stretch of lawn is most pleasingly broken by a wide sweeping curve of stepping stones.



At the Norwood Club One May See This Terrace of Slate Flagging, the Irregular Pieces, Interspersed with Grass, Achieving an Effect Which Sets Off to Perfection the Rough Stone Walls of the Club House and Creates a Charming Atmosphere Which Would Be Difficult to Rival with Any Other Material.



Here the Irregular Pieces of Flagging Have Been Jointed with Cement, a Slightly More Formal Treatment but Affording a Smoother and More Practical Surface for Porch Flooring.

But where a more formal effect is desired it is the practice to use flagging of straight rectangular shapes laid close with cemented joints. The monotony of rectangular shape is broken by employing pieces of several sizes, neatly fitted together, at more or less regular intervals.

All kinds of garden work is greatly enhanced by the skillful blending of colored materials and the tints which are available in slate flagging are sufficiently varied to afford an opportunity for that individuality of treatment which is another demand of the day, and which brings a new character and interest to each home.

Among the available unfading varieties of slate will be found the following: green of a uniform light shade; variegated green and purple blended in a cloudy or irregular fashion; red, a bright, pleasing, uniform Florentine red; variegated red, similar to clear red but selected from beds showing various dark markings; old red, of varied deep shades of red containing also blotches still darker, even black and having a rough fracture which gives it exceptional value for architectural effect.

The weathering and fading varieties include: weathering green which when fresh is green turning to various shades of buff, brown or yellow within a few weeks, the color change not being predeterminable; mottled purple which is predominately purple with occasional clear green markings on practically every piece, certain beds weathering visibly; clear purple and mot-

tled purple containing green; sea green, of a gray or green color fading quickly to brown, yellow or buff; brown, buff and yellow, obtained from beds which turn to these shades after exposure to the weather.

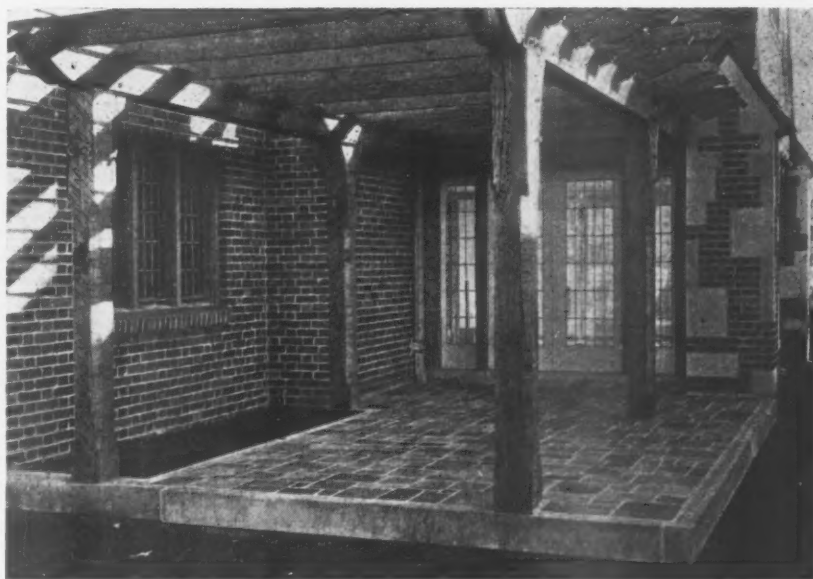
When flagging of this material is tastefully laid and the grass has grown up naturally around and between the pieces the effect produced is as if it had actually grown there, as a part of the natural surface, this effect being greatly enhanced by the woodsy colors which have been mentioned. These colors are also highly desired for the summer atmosphere which they lend to the house when used for interior and porch flooring. And for these purposes, too, slate flagging is now greatly in demand.

Floors of irregular flagging harmonize most effectively with the Spanish and Italian interiors and when used with discrimination add much to other styles as well. In many large churches as well as club rooms, lodge vestibules, banks and hotels, they are being used quite freely. Their informality for these uses is greatly appreciated for it carries no violation of the essential dignity.

Strange as it may seem, this material is not highly expensive and its growing popularity is based on the combination of reasonable cost, beauty and durability.



A Curving Walk of Irregular Pieces, with Grass Growing in the Spaces Between Possesses a Most Charmingly Informal Air Which Adds Much to the Attractiveness of the Grounds.



One of the More Formal Applications Is the Terrace Porch of This Residence Where the Rectangular Pieces Are Laid Close with Cemented Joints but the Monotony of Form Is Relieved by the Variation of Sizes.

# Good Chimneys Are Essential in Furnace Heating

Why it is Essential that Chimneys Be Properly Constructed to Insure Successful Heating—Suggestions on Their Design

By ROBERT C. NASON

**S**MOKE pollution of the air, waste of fuel and poor heating are, in innumerable instances, directly chargeable to improperly designed or constructed chimneys, and it might be added that these are the rule rather than the exception. Probably no other single source is responsible for so many failures as defective chimneys.

Analytically, the furnace itself has no draft but depends, rather, entirely upon the chimney flue. The better the chimney the more successful the working of the entire plant. While poor construction is more often merely inefficient, instead of dangerous, yet a study of the reports of the National Board of Fire Underwriters reveals that a larger number of fires are caused by defective chimneys than by any other single cause.

A chimney has two primary functions—to provide a draft that will enable a sufficiently rapid combustion of the coal on the grate of the heater and to discharge the gases, usually referred to as the products of combustion. The intensity of the draft depends on three factors, tightness of the flue, its size and its height. The theory of smoke flow in a chimney is based on the difference in weight, or pressure, between the hot gasses in the chimney and that of an equal volume of the surrounding atmosphere.

Cold air, being heavier, falls, and warm air rises, due to its levity. The velocity of smoke flow is greater in high chimneys than in low ones. To prevent reduction of the capacity of the flue it must be made large enough in cross section to reduce internal friction to a minimum. Leaks in the chimney walls offer an added resistance to flow. The outside wind drives cold air into the smoke passage, chills the column of warm air and retards the current. It is for this reason that flues should be absolutely tight. Interior obstructions, by offering resistance to flow, cut down the intensity of the draft. This is a common fault, encountered especially in old houses.

These points were brought forcibly to the attention of the author some years ago in connection with an installation made in a three-story frame house. The building was, I should judge, about 20 years old. The owner wished to change over from stove to furnace heating. Our estimator looked over the house in order to select the proper size and type of heater but neglected to look at the chimney.

The furnace finally installed was unquestionably large enough to give good satisfaction. A handful of paper was burned at the base of the chimney before the job was left as being completed. As the smoke was exhausted readily the conclusion was reached that the draft would be sufficient for satisfactory operation of the plant.

On the first cool day the fire was started and, with a light fire, everything went well. With the arrival of real cold days, however, draft difficulty appeared. When it was

necessary to provide a good, thick fuel bed on the grate it was found the furnace not only did not respond but smoke issued from the fire door, filling the house with smoke and foul-smelling gases. The rooms were little more than half heated.

Inspection of the chimney section above the roof line revealed the seat of the difficulty, for the mortar had crumbled and been washed away between the bricks in the sides, leaving tiny crevices through which the chilly blasts forced their way in the flue. Tiny puffs of smoke issued from the lee side of the chimney. Its height was only 24 feet. As the height should, under no circumstances be less than 30 feet, and preferably 35 feet, it was evident that the mason must be called at once.

Pursuing our examination, an inspection of the chimney where it passed through the attic was made. Faint odors of coal gas aroused suspicion and leakage spots were detected by thin, black deposits of soot on the sides of the chimney between bricks, where small quantities of smoke had been discharged for a number of weeks past. Six feet was added to the top of the chimney

and leaks filled in at considerable expense. Indeed, it was difficult to find a workman who wished to undertake the work at the season. The trouble was remedied, however, and no additional complaints were received.

In later years I learned many other things about chimneys and their proper construction, one of which was that it is always cheaper and better to build correctly in the beginning than to rebuild later. Tops of chimneys should rise above objects such as trees and roofs of adjacent structures so that the prevailing winds may sweep over them rather than down upon them.

Often chimneys are high enough, that is, 30 feet as a minimum, but are overshadowed by trees with the result



Fig. 3. A 50-Foot, Oblong Chimney, the Flue Area of Which Was Too Small to Afford a Good Draft. Three additions were made to obtain sufficient height to create a satisfactory pull.





Fig. 1. Errors in chimney height That Are To Be Avoided. (A) Arrows indicate how wind drives smoke back down chimney when its top is below roof ridge. (B) When chimney tops are overshadowed by trees down draft occurs.

building may be noted in Fig. 2. The action of the wind when tops are below the ridges may be observed in Fig. 1A.

Chimneys 50 feet high are sometimes seen, yet this is necessary only under conditions such as in Fig. 3, where an oblong flue had so restricted an area after a few years' use, due to soot deposit, that the additional height was necessary to obtain good draft.

## Straight, Smooth Flues Are Best

Flues would best be run as straight as possible, free from offsets and the mortar carefully slushed off smooth on the interior. How objects such as loose bricks sometimes catch in offsets is shown in Fig. 4. Walls of chimneys should be no less than 8 inches thick and 12 inches is better, unless the flue is lined its entire length with fire clay flue lining.

The ideal flue is round, as frictional resistance to flow of products of combustion is less in this type, due to the churning action of the smoke in its upward course. Square or oblong chimneys are more common at present because of their lower cost, though it is thought likely that the popularity and greater efficiency of fire clay lined chimneys may increase the use of round flues in the future.

Square flues are more efficient than those of oblong shape, as they more nearly approach the round. It is known that the corners of rectangular flues cannot be taken as effective free area. That is, an 8 by 8-inch square flue, though having greater square area, is regarded as the equivalent of only an 8-inch diameter round flue.

## Rectangular Flues

In building oblong flues care should be exercised that the length of the longer side shall not be more than 4 inches greater than the shorter side. Thus, a 4 by 16-inch flue represents poor construction. The minimum size would best be not less than 8 by 12 inches and when the height of the chimney is not over 30 feet, 12 by 12-inch flues are preferable.

For heating bungalows or other small

shown in Fig. 1B, the arrows denoting the path of the wind under such conditions. It is for the same reason that it is advisable to extend chimneys 3 feet above flat roofs and 2 feet above the ridge or peaks of other types. A chimney properly extended above flat roofs when there is an adjacent, higher

buildings 8 by 8-inch flues are permissible, according to the Standard Code of the National Warm Air Heating and Ventilating Association, when hard coal is used as fuel. When soft coal is used 8 by 12-inch flues are necessary, due to the heavy deposit of soot on the interior, which reduces the area.

The following table offers a list of flue sizes recommended by the Association:

Diam. Smoke Pipe or Flue In.	Rectangular Flue Sizes In.	Height Top Flue Above Grate	Equiv. Grate Diam. In.*
8	8x12	35	20
9	8x12	35	22
10	12x12	35	24
12	12x12	40	30
14	12x16	45	34
15	16x16	45	36
18	16x20	55	..

\*Flue area not less than one-sixth grate area, in square inches.

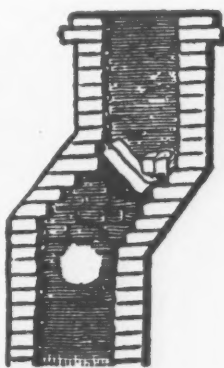


Fig. 4. Offsets Permit the Lodging of Objects Such as Loose Masonry.

A case which came to the author's attention in Cleveland a few years ago illustrates how essential it is that flues be painstakingly examined through their entire length before estimating and installing furnaces in existing buildings. My company was asked to bid on a furnace installation for a three-story combined business and residential building. There was a restaurant on the first floor and living apartments on the two floors above. The building was, possibly, ten years old and in good repair. The owner affirmed that the flue was large and straight. So this proved, for our estimator even went to the roof and looked down the inside.

It was not until after the heater was installed and started that trouble appeared. When the time came to start the plant everything was satisfactory except the draft. This was thought at once to be the reason for poor heating and our inspection was only for the purpose of

locating the exact seat of the difficulty.

The fire was a dull red, whereas experience has taught that when the draft is strong this becomes an incandescent white when the drafts are opened wide. Clouds of black smoke issued from the chimney top and the smoke pipe was only warm where it connected to the chimney base. With a good draft the pipe should be too hot for the hands. When galvanized iron is employed for the smoke pipe it should become blue after a few weeks' use, that is, if the draft is good.

The trouble was, in this case, the connection of the smoke pipe from the kitchen range to the chimney flue. The suction of the chimney naturally followed the path of least resistance, and as the stove connection was nearer the chimney top a good share of the draft intended for the furnace was being sidetracked to the

(Continued to page 210)

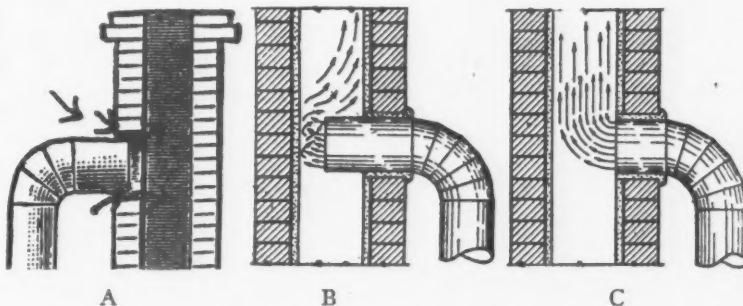


Fig. 5. Correct and Incorrect Methods of Making Smoke Pipe Connection with Flue. Left, pipe extended insufficiently into flue, permitting leaks at connection—collar should be added. Center, pipe protrudes too far into flue resulting in unnecessary resistance to draft. Right, correct method of making connection.

# Matt-Face Vitrified Tile Makes Attractive Bungalow

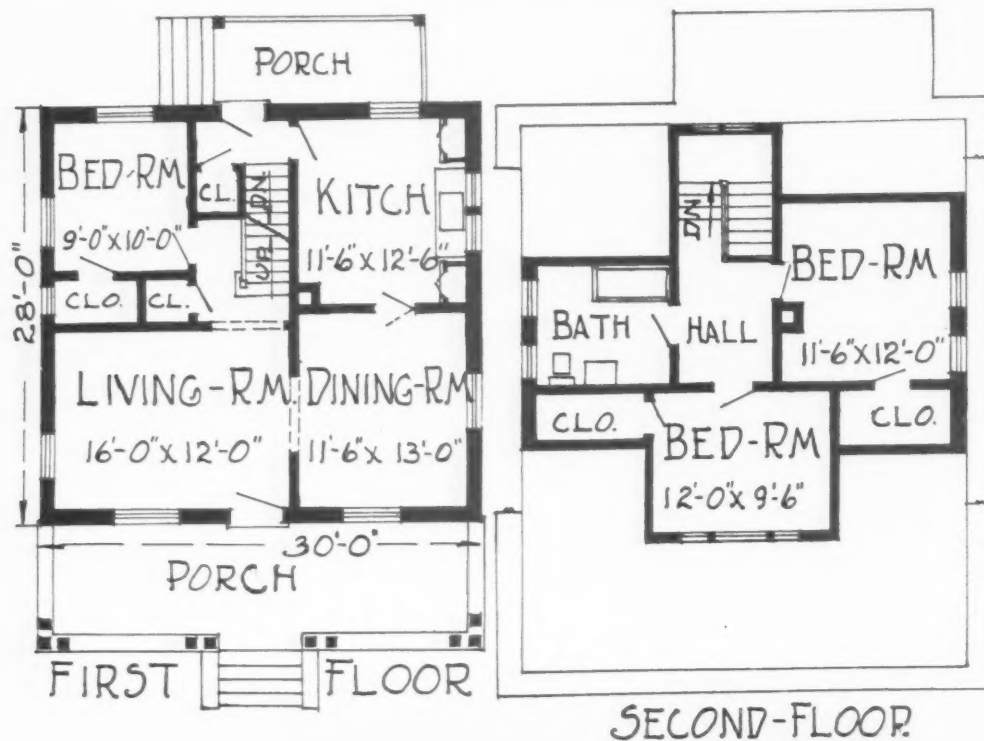
**N**OT least among the elements which go to make this small home attractive is the material from which it is built. The walls are of a matt-face vitrified tile in a highly practical and, at the same time, beautiful building material. Not many years ago it was discovered that variegated colors, when properly blended, added to the attractiveness of masonry walls. Previously the makers of brick and tile had discarded units which did not perfectly match. Today a great effort is being made to produce these units

which, formerly, were considered waste.

This matt-face tile possesses naturally a variation of color in tones of red-brown and with suggestions of purple. They add a warmth to the home which is also exactly in line with the modern vogue in color. These colors, too, are absolutely permanent and entirely unaffected by weather, nor do they have to be protected by an overcoating of stucco. They are fire clay tile and the vitrified surface is entirely impervious to the moisture which is absorbed by tile that do not have the vitrified surface.

With such material to work with a plan was drawn which offers a number of attractive features to the prospective owner of a small home. The space occupied is but 30 feet wide and 28 feet deep without the porches. This adapts it to the smallest lot which would be desirable or available. The exterior has the well proportioned simplicity that makes for good architecture in the small home.

Within is found a compact floor plan affording a remarkably large amount of space for so small a building and a grouping which makes for a maximum of convenience. One is actually surprised to find this house offering six rooms and bath, not to mention five ample closets. Nor are the rooms too small for comfort. They are of just a size to create an atmosphere of coziness and to provide full comfort for the family of average size.



Only a Suggestion of the Real Attractiveness of This Home Can Be Obtained from the Picture, for It Is in the Warm, Variegated Tones of the Tile Walls That Much of Its Charm Is Found.

## THE PLAZA MILWAUKEE, WIS.

Owners—Geo. W. Adams Bldg. Co.  
Architect—Roland O. Razall  
Painter—Richard Zahn

# 1360 GALLONS



**I**T is not the flashy job—big or little—that counts. It is continued heavy-duty daily work that proves your materials.

Here's the PLAZA, a 200 apartment hotel in Milwaukee, typical of the highest-grade modern construction.

Richard Zahn had the painting contract. His problem, like every other contractor's, was:

- 1** Perfect results, in accordance with demands of the job and his own reputation.
- 2** Reliable materials that he or his youngest apprentice painter, could count on day in and day out.
- 3** A fair profit.

*So he used—*

- 280 gallons Johnson's Floor Varnish
- 90 gallons Johnson's Rubbing Varnish
- 275 gallons Johnson's Perfectone Undercoat
- 215 gallons Johnson's Perfectone Enamel
- 500 gallons Johnson's Permacote (Flat Wall)

## Speaking of Floors—



*Johnson's Wax Electric Floor Polisher makes floors the easiest, most satisfactory, and profitable part of any job. Simple and efficient, it imparts a hard burnished finish impossible to obtain by hand—and saves 75% of your time, labor and money, doing it.*

*Waxed floors have always been the most desirable. NOW they are EASIEST. Johnson's Liquid Wax and the Johnson Electric Floor Polisher solve all your old floor problems. Ask for our special builder's offer.*

**BUILDERS** Economy and Profit do not necessarily mean cheap materials. They mean *Buying Right*. You can get Johnson quality and Johnson reliability at *Right Prices*.

Get our new Wholesale Price List on Varnishes, Enamels, Stains, Fillers—all interior finishes. Clip this coupon to your letter-head and mail it NOW!

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"The Floor Finishing Authorities"

Please send Builder's Wholesale Price List on Johnson Materials. Also give details of Special Builder's Offer on the new Johnson Polisher.

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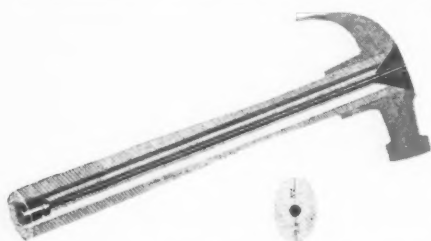




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### A Hammer with a Backbone

**A** HAMMER with a backbone should prove most acceptable to carpenters, mechanics and all others who use hammers in their work, for it is made in all types of hammer and carries an absolute guarantee. The head



**A Hammer with a Backbone, Showing How the Steel Core Is Placed in the Built-Up Wood Handle.**

is drop forged and hand finished. It is heat treated in three stages to give strength to the claw, toughness to the eye and hardness to the face. The handle is built in of two pieces of selected, second growth hickory, double dove-tailed

through the entire length with the grain opposed and set with waterproof casein glue under pressure. A thorough soaking cannot open such a seam.

The tie rod, which is the backbone of this hammer, makes loose or flying heads impossible, strengthens the handle and adds a responsive hang which dulls the shocks. It is of special analysis steel and holds the head by means of a wedge. Ordinarily the head will not loosen but if it does it can be tightened by a turn of the screw at the end of the handle. The screw is slotted to take a screw driver.

In case an unusual accident splinters the wood of the handle the work can be continued because the steel backbone remains intact. The wood can be quickly replaced, using the old backbone, wedge and lock nuts. The wood handle, however, is practically unbreakable because of its laminated construction.



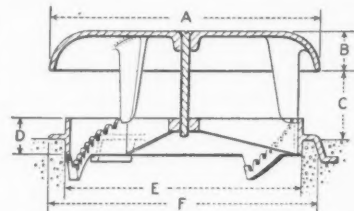
### Ventilation Air Diffusers

**I**N mechanical systems of heating and ventilating the air must be distributed without draughts, the supply must be regulated so that each section of the room will receive an equal volume of air, the outlets must be small and inconspicuous and there must be no possibility of dirt entering

the openings. Because of these requirements the air diffusers are an important part of such a system and the requirements are well met by the product of a well-known manufacturer.

This diffuser has three outer bearings and is not dependent on a screw to hold it in place. No amount of jarring or stepping on it can possibly disturb the adjustment and the top cannot be moved by feet when the cap is locked into the recessed notches by the lock screw. Its construction is simple, having only two parts, the bottom floor piece and the cap.

This cap may be raised or lowered and set in a series of ten recessed notches which make slipping impossible and which permit a fine regulation of the air from wide open to completely closed. It is made of heavy iron gray castings and has a smooth top with no dirt collecting depressions. A raised collar on the floor piece prevents dirt or water from entering the air duct.



**This Simple Type of Air Diffuser Permits a Free Circulation of Air Which Is Perfectly Controlled.**

For wood floors anchorage is provided by three flat, screw-eye lugs and for concrete floors by three "L" shaped lugs extending down from the floor flange, embedded in the cement. The finish is in black enamel or any desired color to match woodwork or furnishings.

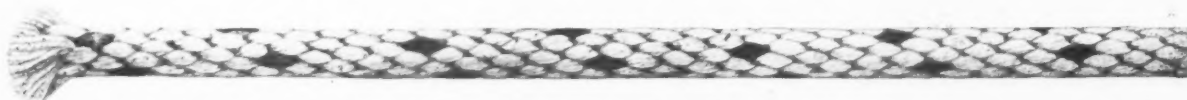
There are no restrictions to air delivery, and when wide open this diffuser will deliver the full area of the connecting sleeve.



### Quality Sash Cord

**T**HERE is a great deal of variation even in such items as cotton window sash cord. This variation depends upon such factors as the length of fibre and quality of the cotton stock used, the braiding of the cord and its finish and inspection. The best cords will outlast the poorer qualities many times over, and by their use the annoyance and expense of frequent replacements is eliminated. In the long run quality cord will prove less expensive than cord which is obtained at a lower original cost.

A full braided cotton cord, made in two grades, may be obtained which will give full service because properly made. The lower priced cord is of a cheaper stock but runs more smoothly and is freer from defects than ordinary low-priced or adulterated cord. The better quality is of extra quality stock, firmly braided, carefully inspected and guaranteed free from all imperfections of braid or finish.



**High Quality in a Sash Cord Means Long Life and Elimination of the Expense and Annoyance of Frequent Replacements Necessitated by the Use of Inferior Grades.**

# These men help you sell

*—but they  
don't sell  
to you*

You increase the selling value of your houses by using their services to plan plumbing fixtures for bathrooms, kitchens, laundries. They aren't salesmen, but counsellors, who save your time and money. They are "Standard" Promotion Men.

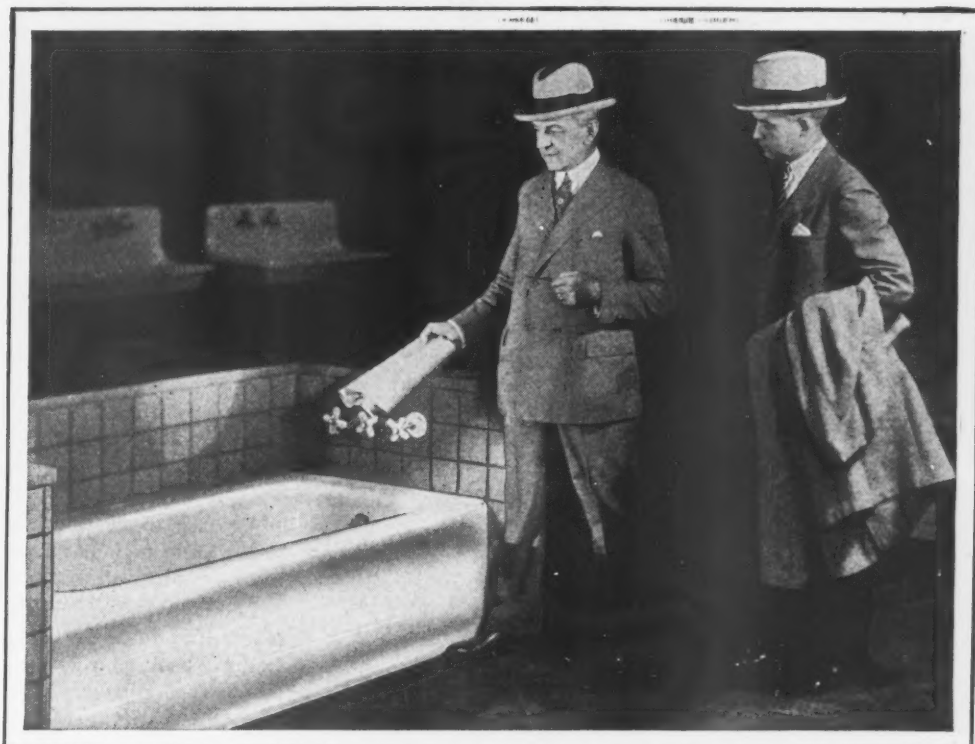
They know from hundreds of houses what home buyers prefer. They point out attractive features such as "yard stick high" one-piece sinks; "tempered water" fittings for lavatories; white seats for closets; swinging spout faucets; many things with an appeal far beyond their cost.

They go with you to the nearest "Standard" Showroom so you can inspect the complete line of enameled ware, vitreous china, and brass fittings. "Standard", you know, gives

Write, on your business letterhead, for the "Standard" Catalogue.

**Standard Sanitary Mfg. Co.**

General Offices: Pittsburgh



"Standard" Promotion Men can recommend the most suitable baths for any house. This is the Pembroke, the popular leader among built-in baths. It comes in different styles for corner, recess, or pier installation, with concealed or open fittings. Four lengths are available.

100 per cent unit responsibility for plumbing fixtures and fittings.

They prepare specifications with pictures and full descriptions to enable you to secure estimates. Then you can buy through any Plumbing Contractor.

"Standard" Promotion Men are at your call, in more than fifty cities from coast to coast—wherever there are "Standard" Showrooms, Branches, Warehouses.



## "Standard" PLUMBING FIXTURES

Your specifications, prepared this way by "Standard" Promotion Men, will insure bids for exactly the plumbing fixtures wanted for your houses.

### Improved Two Cylinder Engine

**A** PROMIENT manufacturer has recently announced a new two-cylinder engine which is the result of 18 years' experience in building high grade engines and contractors' equipment. This power unit develops from 3 to 6

horsepower and is of the four cycle, "L" head, and either hopper or radiator cooled type. The crankshaft and power drive shaft run in roller bearings and the connecting rod bearings are pressure cast babbit, reamed and burnished. The cam shaft runs in brass bushings.

This engine has an independent drive shaft which can be placed on either the right or left side and which can be furnished to rotate in either direction and at several different speeds. In all

cases the governor, carburetor, manifold and magneto side of the engine is away from the drive shaft side. In other words, the working parts of the engine are always accessible, the mixer, or whatever machine the engine is operating, being on the other side of the engine.

It can be furnished to run the power drive shaft at 400, 600, 1,200 and 1,800 R.P.M. The 400 R.P.M. gear combination rotates the drive shaft left hand, anti-clockwise, looking at the engine from the flywheel end. The 600 and 1,200 R.P.M. gear combinations may be had in either direction of rotation. The 1,800 R.P.M. gear rotates the drive shaft clockwise or in the right hand direction.

The crankshaft is the opposed throw type, eliminating crankshaft pressure and making a better balanced engine than heretofore found in two-cylinder engines. It runs at 1,200 R.P.M. The engine is cranked right hand in all cases and the drive shaft is gear driven from the crankshaft.



### Practical Steel Radiator Cover

**A** IR currents passing over radiators carry the dust and dirt that is always present in the air and, ordinarily, deposit it on walls, drapes and ceilings. This can be avoided by properly covering the radiator but in so doing care must be taken to avoid interfering with its radiation efficiency. These two points are well taken care of by an attractive and inexpensive steel radiator cover.

These covers are custom made, built to fit any type of floor or wall radiator and will not interfere with pipe connections either at the top or bottom of the radiator. They are constructed from furniture steel with a 2-inch flange on all four sides. The front is opened in 1½-inch squares to assist radiation and the corners are all electric and acetylene welded so that the cover is one solid piece of smooth heavy steel.



**Protection of Walls, Drapes and Ceilings from Dirt and Proper Deflection of Heat Are the Two Purposes Which This Radiator Cover Successfully Seeks to Accomplish.**

End brackets are of 1-inch band iron welded to the frame and the back shield, of extra heavy sheet, extends to within 6 inches of the floor, protecting the wall and allowing the heated air to circulate upward and outward. The frame fits closely to the lines of the radiator and is securely fastened to it by a patent screw and chain attachment.

A curved deflecting plate, of heavy sheet steel, is bolted to the end brackets and is so formed as to deflect the heat into the room without loss of heating efficiency.

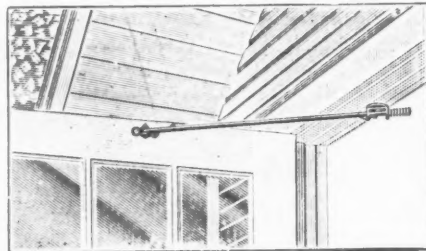
These covers are finished, according to specifications, to match the furniture or wood trim of the room and the frames, back shield and deflecting plate are finished to match the radiator. The enamel wood finishes are of the best quality and a soft toned French gray is also produced.



### Simple Garage Door Holder

**A** SIMPLE and inexpensive garage door holder is shown in the accompanying illustrations. Though simply constructed, it is strong and durable, being made of cold-rolled channel steel and stampings of the best materials. It is finished in a rust-proof ebony finish. It can be quickly and easily installed by anyone.

The purpose of this holder is to save the automobile from being damaged by slamming doors and to keep the doors themselves from being broken. It also saves the time of the driver because its quick automatic action eliminates the delay of having to hunt for a brick or stone to keep the doors



**A Garage Door with the Automatic Holder Installed at the Top Where It Is Out of the Way and Out of Reach of Meddlers.**

from slamming before he can drive into the garage.

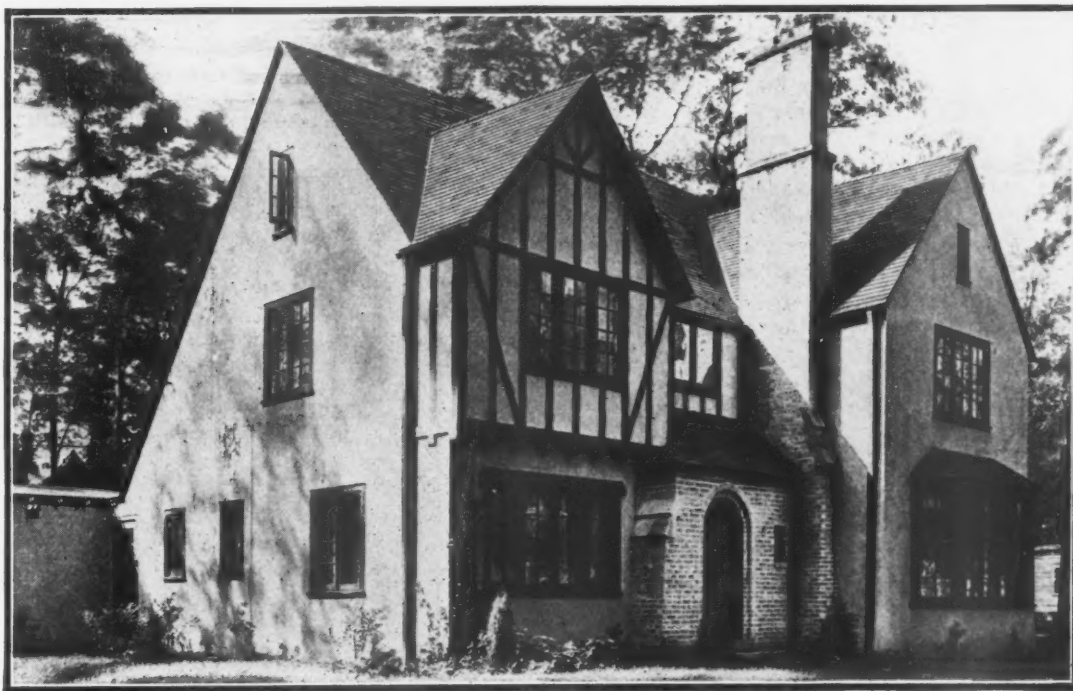
When the door of the garage is opened the holding action is automatic and certain. It cannot be released by the



**This Garage Door Holder Is Very Simple in Construction and Is Made of the Best and Strongest Materials Available.**

wind and, being overhead, is out of the reach of meddlers. To close the door, it is only necessary to push it an inch or two farther open. This releases the gravity latch and the door can then be closed. This holder can also be used on other kinds of doors such as schools and barns.





Home of C. S. Cawthorne, Lake Bluff, Illinois. T. W. Jackson, Builder. White & Weber, Architects. Celotex Insulating Lumber used for sheathing and insulation in place of wood lumber and any extra insulating material.

## Insulation added — cost reduced

THE builders of this house saved \$50.00 on the sheathing alone. Yet it is an insulated house and also a stronger house. Celotex Insulating Lumber was used in place of wood lumber and building paper as sheathing.

### As sheathing

The Celotex boards (4 x 8 feet x approximately 7/16 inch thick) were nailed directly to the stud framing. Furring strips were nailed through the Celotex to the studs, and metal lath secured to the furring. Then the walls were stuccoed in the usual way.

This construction produces a stronger house. Tests show that Celotex is much stronger in wall sections than wood sheathing.

### Under plaster

On inside walls, Celotex is used in place of lath. Plaster is applied directly to it. It bonds with plaster; there are no keys to break off, and the wall is free from lath marks forever.

### Little or no extra cost

The use of Celotex makes houses winter-warm, economical to heat, summer-cool, quiet, strong and durable. (Impr-

How T. W. Jackson built this  
**INSULATED** house for less  
than cost of ordinary construction

tant points that mean real money, if you are building to sell.)

It is the only effective insulation which provides great strength in wall sections and is not an extra item in the building.

Celotex is economical to apply. The broad, strong boards can be sawed and nailed just like wood lumber and with less waste in cutting and trimming.

### LOOK AHEAD!

Leading builders and contractors agree that the practice of building heat-leaking houses is soon to end.

Five years from now, nobody will want to live in such a house. Nobody will want to buy or rent such a house. Nobody will want to build such a house.

Progressive builders are using Celotex to get more business and to help establish their reputations for building better houses. Ask your architect or lumber dealer to tell you more about Celotex. All lumber dealers can supply it. Leaders in these lines advise its use. And send the coupon below for complete details that show just how Celotex is used and its many advantages to you as a builder.

THE CELOTEX COMPANY, CHICAGO, ILL.  
Mills: New Orleans, La.

Branch Sales Offices in many principal cities  
(See telephone books for addresses)



### HOW CELOTEX IS USED

Celotex gives proper insulation and provides far greater bracing strength in walls than wood lumber. Q In outside walls, as sheathing, it affords many times the structural strength of wood. In inside walls, under plaster, it gives a stronger wall with a better bond between Celotex and plaster than between wood lath and plaster. It eliminates lath marks. Q Results: more comfort, greater security, longer life, less upkeep expense.

THE CELOTEX COMPANY, Dept. T-142  
645 N. Michigan Ave., Chicago, Ill.  
Send for the free Building Book and Specification Book,  
on Celotex Standard Building Board.

Name .....

Street .....

City .....

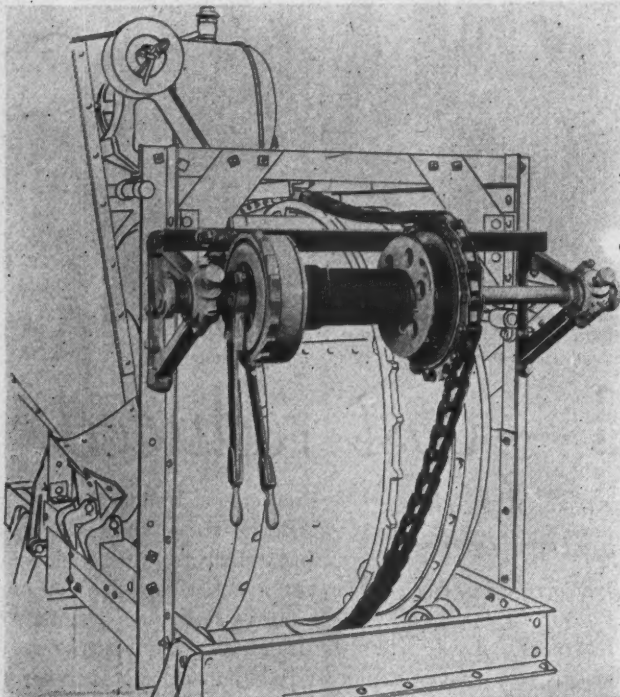
State .....

# CELOTEX

INSULATING LUMBER

### Hoisting Attachment for Mixers

**A** NEW hoisting arrangement that is now being placed on the market, as an accessory for a well-known line of mixers, embodies the valuable combination of speed, compactness and ease of operation. This hoist was designed especially for light hoisting work and may be put on the mixer in the field without any change in the machine itself. It is capable of hoisting loaded wheel barrows, small elevators and other general hoisting work for the contractor whose construction work is not large enough to warrant the expense of a special hoist. It attaches directly to the mixer frame and is driven from the mixer drum chain.



**Designed Especially for Light Hoisting Work. This Mixer Accessory Offers a Combination of Speed, Compactness and Ease of Operation.**

The hoist shaft is mounted on self-aligning bearings which prevents the shaft from springing or becoming out of line. The winding drum will take 400 feet of  $\frac{3}{16}$ -inch cable of handling 1,200 pounds at a speed of 40 feet per minute on a double line pull. There is a special advantage in a hoist of this type when laying concrete for curb or gutter work. The mixer itself can be moved along with the progress of the work on its own power by fastening the cable to some stationary object and drawing the mixer along with the course of the work.



### Air Filter Has New Features

**A** NEW air filter differs distinctly from any other filter on the market in two particular features. A two-stage construction which insures extremely low resistance to the air flow and an oil-soaked pad for keeping the filter surfaces continuously moist between chargings. This filter is said to remove 97 per cent of the dust and dirt from the air by deposit on the oil-moistened filter surfaces.

The first stage baffle plates collect the heavier dirt allowing the air carrying the fine dust to pass through to the wire coils of the second stage, where the finer dust is collected on the wires and eventually loosens and falls to the bottom of each coil. This method not only prevents the filter from building up too great a resistance to the air flow but allows quick and easy cleaning.

While the filter cells are interchangeable, the supporting

frame is constructed for the particular job. It is a sturdy and rugged steel frame designed to withstand years of hard service of removing and replacing filter cells.

In cleaning the operator lifts the cell from the frame with a removable handling bar and places it in a cleaning



**This Air Filter Embodies Two Distinct New Features Which Give It an Efficiency of 97 Per Cent Removal of Dust from the Air.**

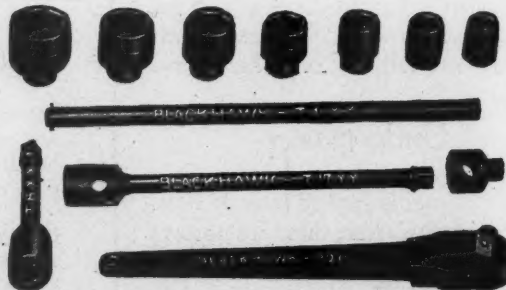
tank. Then, without touching the cell, he raises and lowers it in the cleaning solution, quickly removing the accumulated dust and dirt. Next comes the charging tank, where the cell is thoroughly charged with oil, placed on a rack and allowed to drain, after which it is again ready for service.



### A New Heavy Duty Wrench

**B**EFORE placing a new, heavy duty wrench set on the market, one manufacturer placed one of the sets in the hands of an electric railway and light company for a year's test. During the test period this set was in daily use, pulling in motor studs with a 6-foot extension bar on the ratchet wrench, with the weight and pull of two men. This company making the test reported that the wrench was still paying dividends at the end of the period.

This wrench was especially designed for heavy duty work,



**One Year's Test Under the Most Severe Conditions Qualified This Wrench Set to Be Placed on the Market for Heavy Duty.**

to meet the requirements of engine builders, electric and steam railways, power plants, ship and bridge builders and all similar work. The test mentioned, during which not one replacement was necessary, shows how well it meets the demands placed upon it under the most severe conditions. The complete set of quick detachable wrenches is guaranteed to stand up under extra hard service.



THE SHERWIN-WILLIAMS DECORATIVE STUDIOS,  
Dept. B, 407 Canal Road,  
Cleveland, Ohio.

Please send me Description Blanks. I am a  
builder and have.....houses under  
construction.

Name .....

Street.....Place.....

## THIS COUPON—*cut it out!*

### Here is a free offer from the Sherwin-Williams Decorative Studios

If you build houses to sell, send us the above coupon. We will, in return, send you some Description Blanks on which to fill in a simple description of any house or houses you may have under construction.

Upon receipt of these Description Blanks from you, the artists of our Decorative Studios will prepare and send you, *free of all charge*, expert color sketches for the exteriors and for the different rooms. They will be prepared with the actual colors, not water colors.

By means of these color recommendations your houses—in effect—get the services of highly skilled decorators. This gives you an excellent new selling argument to capitalize. Decorations carried out under this plan mean quick sales and better prices.

Do not forget that the service is free—it is a part of the Sherwin-Williams policy to promote the most successful use of paints, varnishes, stains, enamels and lacquers. Cut out the coupon and send it today.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



### Removable Steel Windows

**T**HE most outstanding feature of a certain line of steel basement windows is that they are so designed that a woman can easily remove the window from its frame for cleaning or painting.



Steel Basement Windows Which Are Quickly and Easily Removable from Their Frames for Cleaning or Painting Are a Great Convenience to the Householder.

This, however, is not the only characteristic which recommends them. Being entirely of metal, they are, of course, both fireproof and, if kept properly painted, weatherproof.

These windows are made especially for the better class of residences and it is claimed by the manufacturer that they can be installed more cheaply than wood, as they are made in sizes to fit any type of construction. The frames carry an out-

side metal masonry guide which also forms a brick mould, and an inside guide which prevents fouling and allow the sash to swing freely, thus removing a cause of annoyance common to basement windows.

Another cause of annoyance found in basement windows is eliminated by a powerful cam action latch which holds the sash tightly in place.



### New Type Revolving Shovel

**R**AILROAD-TYPE shovels, long the most adequate digging tool in ore and rock, have always had certain inherent shortcomings, which resulted in the frequent installation of small revolving shovels on work which was unquestionably beyond their capacity. The railroad-type shovel lacked mobility. It worked very close to the bank and its digging and dumping radius was limited. On the other hand, the revolving shovel lacked the strength, power and capacity of the railroad-type.

A new shovel is now being built to combine the advantages of both the railroad-type and the full revolving shovel. This new shovel combines five distinctive features: the speed of action of the railroad-type shovel; the mobility of single truck caterpillars; the full revolving swing; big dipper capacity, four yards; ruggedness and power greater even than the railroad-type shovel.



A New Shovel Which Combines Five Distinctive Features—the Speed of Action of the Railroad Type, the Mobility of Single Truck Caterpillars, Full Revolving Swing, Big Dipper Capacity, Ruggedness and Power.

This machine has a dumping height of 20 feet. Its dumping radius is 36 feet. The boom is 29 feet long and the rear end radius is 17 feet. The machine is designed and built with one idea constantly in mind, that of building a machine which would be as free from interruptions in operation as it was possible to build. To this end all parts are made with a ruggedness much greater than in shovels formerly built.

The machine is planned from beginning with the thought of efficient operation and the steam machine includes features which are new in steam shovel design, such as fire brick arch and superheater as standard equipment. The electric machine is equipped with Ward-Leonard direct current generator field control. It has been possible in the design of this machine to eliminate the necessity for compressed air on the machine.



### Permanent Glazing Composition

**A** GLAZING composition for bedding and glazing sash, skylights, conservatories and glass construction in general or for setting tiles in floors and walls, is said to be a superior material because of its durability and elasticity. It never sets hard and retains its elasticity indefinitely. This saves the breakage of glass, which is especially important in the case of conservatories and wire glass. It yields slightly to atmospheric conditions, yet always makes a tight joint and is not affected by vibration.



For Glazing and Bedding Sash and Also for Setting Tile in Floors and Walls, This Compound Is Exceedingly Elastic and Durable and Is Not Affected by Atmospheric Conditions.

This composition adheres strongly to wood, metal and glass and never cracks or crumbles. It stands heat and cold and is not affected by moisture or changing weather. It beds perfectly making a tight joint under all conditions, never cracks, peels or chips, and it is said to be very economical as it is double the bulk of white lead putty and retains its essential qualities indefinitely.

It can also be used for pointing stone or terra cotta work and flashings, for bedding steel or sheet metal frames, and for sealing cracks in concrete copings, swimming pools and similar work. The stock color is light gray but any desired dark shade can be furnished at the same price in quantities over 500 pounds and white or other light shades at a slightly increased cost.

The manufacturers of this composition also make a seam composition which together with a seam paint is especially adapted for expansion joints in promenade roofing tile, concrete work, etc. It is made in white, black, yellow and gray.



**"Carney Is Extremely Satisfactory"**

W. F. Smith, Engineer of the B-W Construction Company, Chicago made the following statement after using Carney for practically all of the brick work in the Peabody Hotel, Memphis, Tenn.

"We do not hesitate to state that we find Carney Cement for mortar is extremely satisfactory because it is economical both in labor and material and also in point of time required for mixing.

We are pleased to give Carney Cement our recommendation after having used it in a number of buildings."

# Figure it out yourself—

**CONSIDER** these facts in relation to building costs, and then figure in dollars and cents what Carney means to you on a job.

Five sacks (5 cubic feet) of Carney produce 19 cubic feet of mortar, and lay over 1000 bricks.

There's no wasted labor of slaking lime, because Carney needs no lime.

Carney comes ready to use—no soaking necessary.

Masons can lay more brick per hour with Carney—because its slower setting quality makes brick tamping and re-tempering on boards unnecessary.

There's no waste with Carney—mortar left over night can be used with excellent results.

Carney's flour-like fineness produces an unusually smooth, plastic mortar—another aid to fast masonry.

Carney can be used all year 'round—zero weather does not affect it.

Besides saving labor and material costs, Carney forms a hard, everlasting bond—a combination that contractors can hardly afford to overlook.

## THE CARNEY COMPANY

District Sales Offices: Cleveland, Chicago, Detroit, St. Louis and Minneapolis.

**Specifications:**

1 part CARNEY  
to 4 parts sand.

*Cement Makers*



*Since 1883*

# CARNEY

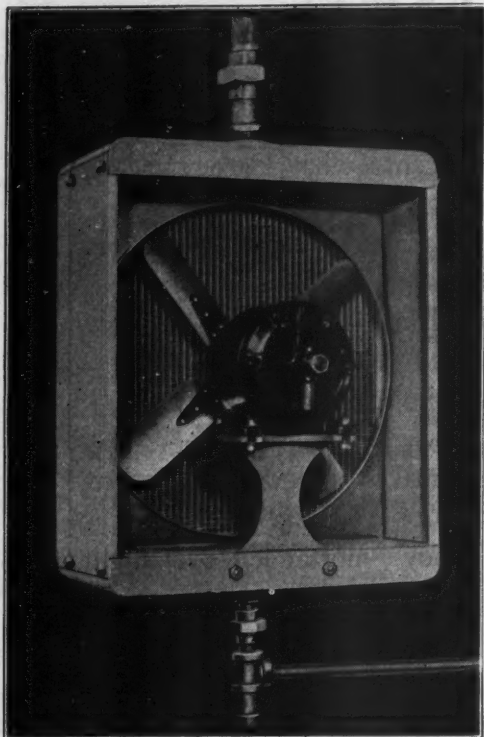
*for Brick and Tile Mortar*

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



### Something New in Unit Heaters

**M**ANY new and interesting advantages in unit heating are revealed in the recent announcement of a unit heater, produced by an organization with more than fifteen years' experience in the manufacturing of heat-transfer devices.



**A New and Interesting Type of Unit Heater Attaches Directly to the Steam Pipe.**

The heater consists of three major parts; the condenser assembly, the manifold and frame assembly, and the motor and fan assembly. The steam condenser is of patented construction made by special process from selected copper and special materials. This construction provides not only for heat transfer in accordance with the

proper principles of thermodynamics, but also provides for free contraction and expansion. The condenser cannot leak, and will not rust or corrode.

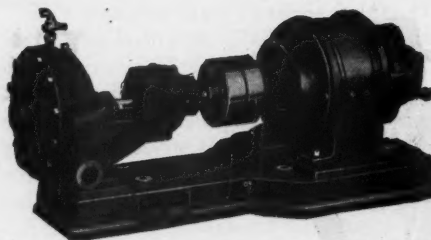
The total light weight of this unit heater of only 125 pounds results in two important advantages. First, brackets, braces and structural work are entirely eliminated, for it is only necessary to suspend the unit from the steam line by means of a length of pipe and a union. Two men with a pipe wrench can make the connections. Second, the complete unit can be turned on the union connections for direction of air flow toward machine bench, window, door, or wherever desired to suit the immediate heating situation. Adjustable deflectors may be added to control the downward angle of heat discharge.

This heater is rated 165,000 B.t.u. per hour with five-pound steam pressure and room temperature of 60 degrees Fahrenheit. Approximately 2,000 cubic feet of air pass through the heater per minute, being distributed over a wide area instead of being concentrated in the immediate vicinity. Because units can be easily added, if desired, aside from original installations, they are proving very popular as supplementary equipment to existing hot water and steam heating systems that are inadequate.



### Pump for Ice Water Circulation

**A**NOTHER pump has recently been added to an already extensive line of pumps for every service. This pump is designed particularly for circulating ice water in hotels, apartment houses, clubs, etc. It is designed to operate satisfactorily with



**This Pump Is Especially Designed for the Circulation of Ice Water.**

a pressure of 50 pounds on the suction, which makes it especially adaptable for a house booster pump.

The pump itself is of the two stage, single side suction, open impeller type. It is mounted on a cast iron bedplate with pin and buffer type flexible coupling for direct connection to a one-horsepower electric motor of standard make. Capacities of from ten to thirty gallons per minute are obtained.



### Garage Door Spring Bolt

**A** NEW, wrought steel spring bolt, for fastening the tops of garage and similar doors, is durably and practically constructed. The face of the bolt is so shaped as to latch readily and easily when the door is closed. It may be reversed by simply unhooking the chain, turning the bolt around and replacing the chain. This feature permits the bolt to be used at either side of the door.

The spring is made of music wire and is heavily galvanized to resist rusting and entirely encased to prevent the elements from destroying the working parts. The bolt plate is five inches long with a width of  $2\frac{3}{8}$  inches and the bolt is  $\frac{3}{4}$  inch square. Two different types of strikes are provided.



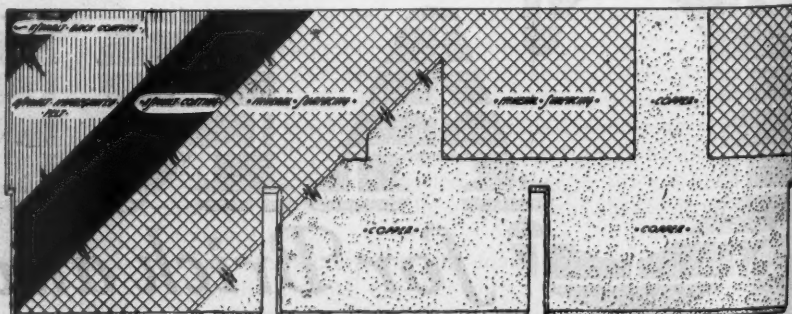
**A Wrought Steel Spring Bolt for Garage and Similar Doors.**



### Copper Coated Asphalt Roofing

**C**OMMERCIAL production of a copper covered non-metallic substance, long the dream of electro-metallurgists, has been accomplished and put to large industrial use.

The new product which this achievement gives is a copper clad asphalt shingle, and the process is termed galvanoplastry. This shingle consists of an asphalt back coating, on which is an asphalt impregnated felt, a second asphalt coating, a mineral surfacing and over all the copper coating.



**This Sketch Shows the Composition of the Newest Type of Prepared Roofing, a Copper Covered Asphalt Material.**





Architects  
Hugh Tallant and  
J. E. R. Carpenter  
New York, N. Y.

HURT BUILDING  
Atlanta, Ga.

Contractors  
Realty Construction  
Company  
Flint, Mich.

## "A fine building—who's backing him?"

"Who's backing him?" This question is often asked when ground is broken for some new building which is to improve a business or residential section. The answer is of tremendous importance to the owner—the builder—the prospective tenants—the community at large.

Sound, constructive financing of an apartment house, hotel or office building is necessary to successful completion and occupancy. Without it—the future is full of danger.

There can be no doubt about steady progress, with payments ready when due, if a building is financed by G. L. Miller & Company. All over the country prominent and successful office buildings, hotels and apartment houses, designed by foremost architects and built by leading firms, testify to the soundness of the Miller Plan.

The Miller Plan has placed at the command of many an owner the financial assistance of men and women in all walks of life—who are glad to invest in Miller First Mortgage Bonds. A Miller Bond issue, secured by a first mortgage on his land, building and equipment, has meant success to the plans of many an owner. It has meant increased business for many a contracting firm.

The Miller Plan of Financing offers owners and builders the following advantages:

1. Periodic disbursements are made as the building is constructed.
2. Building is sufficiently financed at the outset.
3. This financing is secured by a first mortgage on the land and building.
4. Convenient payments, out of income from the completed structure, take care of interest and reduce amount of indebtedness.
5. Financing is no more, and frequently less, expensive under the Miller Plan. No shopping for money. No renewals of short-term mortgages.
6. Best type of building is produced. The architect's ideas are carried out.
7. By the simple operation of the Miller Plan, the owner is relieved of the worrisome details of the ordinary loan.

*\$250,000 to \$1,000,000 and more  
available for owners.*

We are ready to place at the disposal of property owners from \$250,000 to \$1,000,000 and more, which will be secured by a first mortgage on land, building and equipment.

Find out about the details of the Miller Plan. Read enthusiastic letters from owners and builders for whom we have negotiated first mortgage bond issues. *Write for Booklet LG-2.*

# G. L. MILLER & CO.

INCORPORATED

Northern Headquarters—30 East 42nd Street, New York City

Southern Headquarters—Hurt Building, Atlanta, Ga.

# Linoleum for Every Room

**L**INOLEUM for every room in the home. This is not a mere idle thought of some manufacturer's nor a mirage among the dealers. As a matter of fact hundreds and thousands of dwellings throughout the country are fast approaching that state of completion.

The thing started in the kitchen. In England, about the year 1863, linoleum first saw the light of service. Strip by strip it crept into the pantry, down the back halls, and occasionally even into bath rooms. But, in the past few years, with the development of this floor-covering business, the perfection of linoleum both in durability and pattern, households have found it a highly practical and attractive covering for the other floors of the house.

Today there are many homes wherein the living room and bed rooms are adorned with linoleum or felt-base floor coverings. A certain home in Concord, Mass., has pioneered in that community its utilization in every room and the effect is distinctly charming, cheerful and cleanly. This is the home of Mr. John M. Keyes.

Situated near the Old North Bridge where the first shot of the American Revolution was fired, the dwelling, a long, low structure, is in itself a link between these stirring early days and the present era. Within its walls is a large collection of ancient firearms, in addition to many pieces of

antique furnishings and decorations. Mr. Keyes' daughter, an interior decorator, influenced the selection of linoleum throughout, for she knew its many adaptabilities as well as its economy.

About 450 yards were required. In the large library, which is likewise a sort of armory for the collection of firearms, is a sturdy-toned brown and buff linoleum. In the sitting room, dining room and two of the bed rooms a molded gray and black inlaid forms an attractively subordinate base for small woven rugs.

A delightful blue and white mottled "granite" covers the other two bed rooms. Bathrooms and hallways have varied tile effects. The cozy little breakfast room of gleaming white enamel, is set off with marbled gray tile and the sunny kitchen is similarly equipped.

The owner has figured that already this choice of linoleum has cut down the cleaning time of the house by a half and consequently saved him in other ways. He is an ardent hunter and is accustomed to enter this home with hobnailed boots, with the mud of the fields or river-basins trailing after him. There is no great aftermath of cleaning to be done.

The linoleum laid is practically seamless, obliterating the evils of collected dirt and vermin, so often found.



In the Library of an Old New England Home Dating Back to Revolutionary Days There is a Most Interesting Collection of Ancient Firearms. This room, as well as all others in this house, has been floored with felt base linoleum with most satisfactory results.





## --- with his saw perfected Disston began to make tools

**A**FTER your saw sings its way through a cut—working in perfect tune with your hand and arm --- cutting straight and true --- without a bind or a wobble—

And you pick up another tool—do you miss that feeling of confidence; that balance and precision; those finer details of craftsmanship that let you do better work?

You need not. For the maker of your saw made tools for you, too.

They were developed by

slow, arduous experiment just like the Disston Saw.

Tools like the No. 3 Disston Bevel with its patented lock that holds. Like the Disston Plumb and Level with its adjustment that always works. And the No. 5½ Try Square that will not bend.

You can do every job with the zest that you saw, when your tools are Disston Tools.

Instead of just a tool-kit, make yours a Disston-kit.

Your hardware man will show you Disston Tools.

**Henry Disston & Sons, Inc., Philadelphia, U. S. A.**  
*Makers of "The Saw Most Carpenters Use"*

# DISSTON

## SAWS TOOLS FILES



# Quick Work Building Fireproof Amusement Park Structures

**I**N the construction of the Egyptian Ballroom and amusement pier at Ocean Park, Santa Monica, Calif., which is said to be the largest ocean pier on either coast devoted entirely to amusement purposes, unusual methods were employed by the Cowles-Perrine Organization of Los Angeles, architects and engineers, acting for the Ocean Park Realty Corporation.

Two chief objects were sought: rapid erection and fire-safety. When plans got under way in March, it was intended to start building the superstructure April 15 and to have the pier complete on May 30, ready for the earliest summer tourists. But considerable delay was experienced in driving the piles, which form the base for the building, so that erection of the steel did not begin until May 18. The date then set for completion was July 4, and a system of construction was employed which, it was believed, would make that possible. The plan succeeded; formal opening, with all the main buildings complete, even to the finished decoration, took place June 27.

Fire-safety was guaranteed, not only by the fact that the main structure was built entirely of fireproof materials, but also by the demand which the Ocean Park Realty Company made upon all concessionaires, that they also employ materials of the same kind.

The main structure consists of the Egyptian Ballroom, with billiard hall, bowling alleys and electrical transformer-room adjoining. There are some forty concession-buildings, of which the principal are the Carousal and the Fun House, the latter owned by G. M. Jones, of Los Angeles. All these are set on a reinforced concrete floor-deck, 12 inches thick, 1,200 feet long and 240 feet wide, supported by wooden piles and built-up girders.

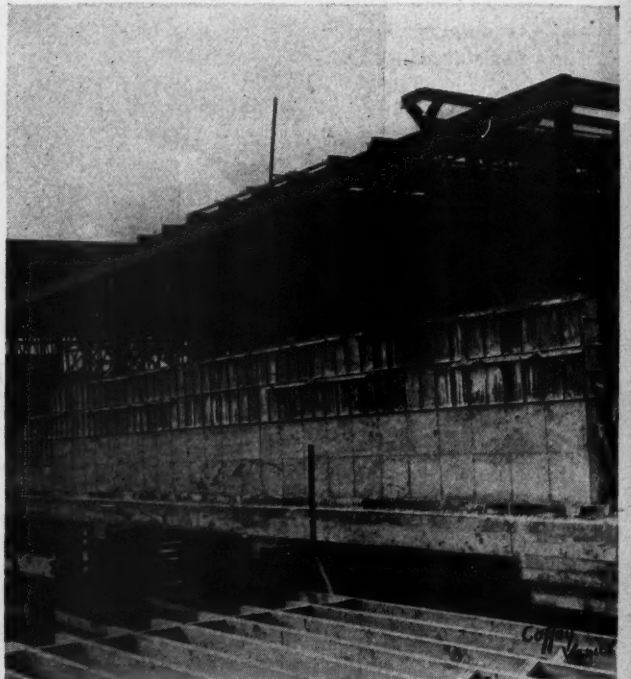
All walls and partitions of the main buildings were erected of structolite concrete, a mixture of structural gypsum with gravel and sand. In the ballroom there are 70,000 square feet of this construction.

Exterior walls and bearing partitions are 6 inches thick. On the outside, welded steel fabric was stapled directly to

the walls to form a reinforcement for the exterior facing of stucco. The gypsum material was poured in metal forms. In keeping with the Egyptian style of the design, the walls are battered one-half inch per foot of height.

Over the entire structure a roof of gypsum construction was placed on steel framing. This system consists of laying

(Continued to page 204.)



Foundation of Pier, Built-Up Girders, Floor Deck of Portland Cement Concrete. Pouring of gypsum concrete in metal forms around the skeleton of steel is shown in this picture.



Egyptian Ballroom, Ocean Park Amusement Pier, Pier Avenue and The Promenade, Ocean Park, Santa Monica, Calif. The ballroom, with finished decorations carved into gypsum concrete and painted, appeared this way at the formal opening, 34 days after erection of the walls began.

## Distinctive Features!

### Unlike Any Other Thatch Roof!

**N**ELSON Master Thatch Roofs have distinctive beauty that pleases the most discriminating and leaves nothing to be desired from an architectural viewpoint.

The colors are Nature's own soft rich tones that blend harmoniously in warm or cool combinations. The Master Thatch Roof is not a strip thatch but consists of individual shingles with curved upper and lower edges which can be reversed. The lines can be varied to suit the desire. Thus real architectural beauty may be obtained.

The alluring beauty of Master Thatch Roofs is permanent. The surface is flaked rock, the natural colors are non-fading. The roof is fire resistant. The shingles are extra heavy and give a coverage of at least 3-ply over the entire roof with 4 or 5 layers over a large portion, resulting in durability for life-time service.

Nelson Master Thatch and other Nelson Roofs are nationally advertised and known everywhere for their exceptional beauty and practical features. Write for full information and free booklet of beautiful color reproductions.

**THE B. F. NELSON MFG. CO., Dept. C**

Minneapolis, Minn.

*Makers of over  
200 varieties of  
roofing and insu-  
lation materials.*



# NELSON MASTER THATCH ROOFS

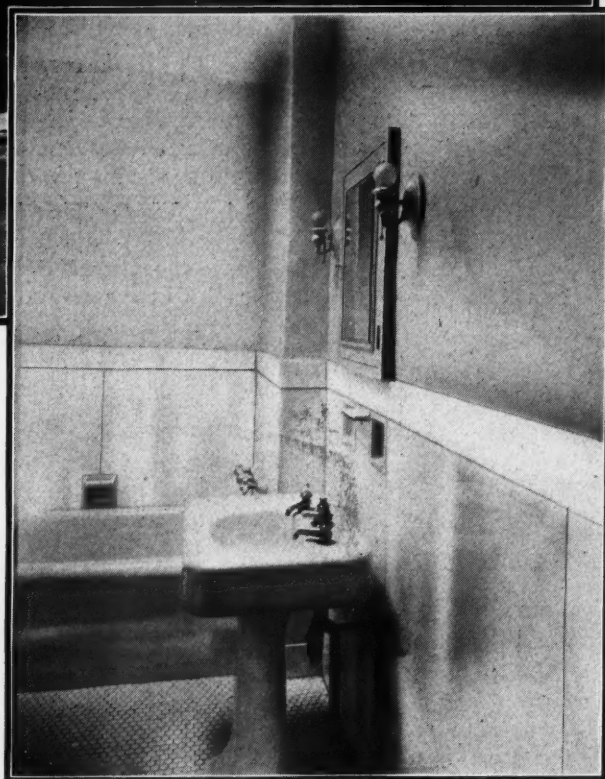




Part of the McCracken Building Corporation Development in Philadelphia where Sani Onyx was used in all of the fifty-one homes

## Added Beauty Easier Sales

As a builder you can add not only to the beauty and utility of the residential work you do—but also to its salability and value.



Typical bathroom as installed by Sani Construction Co., Philadelphia

### Modernize the Kitchen and Bathroom

Sani Onyx for walls, ceilings and wainscoting in these important rooms provides a finishing touch that is as attractive to the user, buyer or tenant as it is lasting in service and economical in maintenance. Five beautiful colors—blue, black, gray, white and ivory, in plain or tile pattern sheets are supplied. Ask for an estimate on the work you now have in hand.

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A VITREOUS MARBLE  
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*Distributors in principal cities throughout the United States and Canada*



# Simplifying Rafter Framing

By C. A. DONNER

**I**N discussing the subject of rafter framing in its varied phases the editor of the AMERICAN BUILDER inquired if, by getting away from all old theories, some more simple and expeditious way might not be found. He was assured that every expedition into the realms of the mysteries of lines, distances and bevels had been successfully conducted and a tool designed accordingly. He suggested that since I was a party in that expedition that I write and tell his host of readers all about it.

If one looks back a short way over the records of attempts, both mechanical and literary, to instruct in the art of framing rafters he will see a pile of junk suggestive of an auto dump and he will hesitate before attempting the creation of anything that might add to the size of that dump.

These mechanical monstrosities have become extinct through the operation of natural law and now we are back to first principles, the old steel square, and we are sticking there so firmly that nothing with less kick in it than a ton of T. N. T. can jar us loose. Yet, if we are to improve upon those ancient theories, tools and practices, we must get away from them; for their fullest possibilities have been developed and we are not satisfied.

The problem of framing rafters is in finding their lengths and bevels and the job is to mark and saw them. Lengths are found in two ways, first, by a formula giving the lengths in feet and fractions of a foot in the metric system, for each foot run of the rafter. Hence a common rafter of one-third pitch having a run of 9 feet 5 inches has its length determined by multiplying the run, 9 feet 5 inches, by 14.42 inches and the related hip or valley by 18.76.

The length of associated members is calculated upon the proposition they will be spaced either 16 inches or 24 inches from the outside of wall, whereas, in practice the position of rafters is governed by location of joists which are always set to accommodate the length of lath or metal ceiling which must be spaced from the inside of wall.

It is very rarely that any given space is maintained uniformly; chimneys and dormers occur to utterly demoralize all calculations based upon a uniform space or run of rafters.

A second process of finding lengths applies the square diagonally upon the figures 8 inches and 12 inches for common and jack and 8 inches and 17 inches for hips and valleys and these lengths measured on the timber are as before, respectively 14.42 and 18.76; but in this case multiplication is accomplished by the repeated application of the square. Here again this additional run of 5 inches may

cause embarrassment and should the corners of the timber not afford a true line, some variation from the correct length might result. And these, briefly stated, are the principal difficulties to be overcome in finding the lengths of rafters.

In both instances it will be noted the unit of measurement for common and jack, hip and valley, is respectively 14.42 and 18.76. Make a rule 18.76 inches long and divide its top edge into 12 spaces. On the lower edge measure 14.42

and divide as before. The total lengths measure full feet in run of rafter and the spaces measure inches. And with this rule measure rafter lengths as floor joists are measured with a standard pocket rule. Any desired space is secured by simply measuring with this rule the distance of that space—more or less as the case may be—than the length of the associated member from which it is required to make that space.

A further problem is to find the "cuts." These consist of level or bottom end cuts and plumb and side bevels, a total of six different angles. It is these top end cuts that need attention. These are usually "found" by the use of a steel square, being found they have to be marked. Some use a steel square which when applied diagonally and upon certain figures gives the correct lines. Others having found these bevels, set a bevel square to those lines and use them as being more convenient.

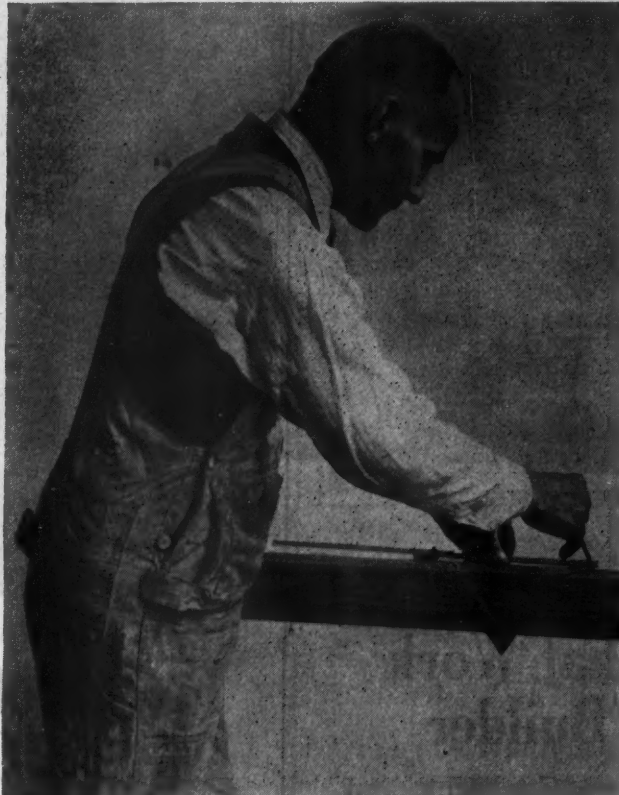
A block of wood is sometimes sawed to correspond with the necessary lines and this applied on edge, then on side, both plumb and side cuts are marked. A few workmen with thin stuff make a device that will lie upon both edges and side of timber. This sawed to lines at each end makes a templet with which marking is very quickly done.

As a final solution to all these problems and a convenience for all these tedious operations a tool constructed along the lines above suggested has been devised, perhaps the photo describes its appearance well enough. In operation, swing the blade partly around and lines show where to clamp it to mark all bevel cuts. Swing around straight and a measuring rule as described is at hand. The side and plumb cuts for common and jack rafters are marked on the outer walls of the frame. The inner walls do the same for hip and valley, all of which is indicated in letters on the tool in their proper place.

Each different pitch will require a different tool and the same may be said of any tool, no one tool does all the work of the kind it was designed to do, not even a nail set.

Even a more radical departure has been made in the

(Continued to page 204.)



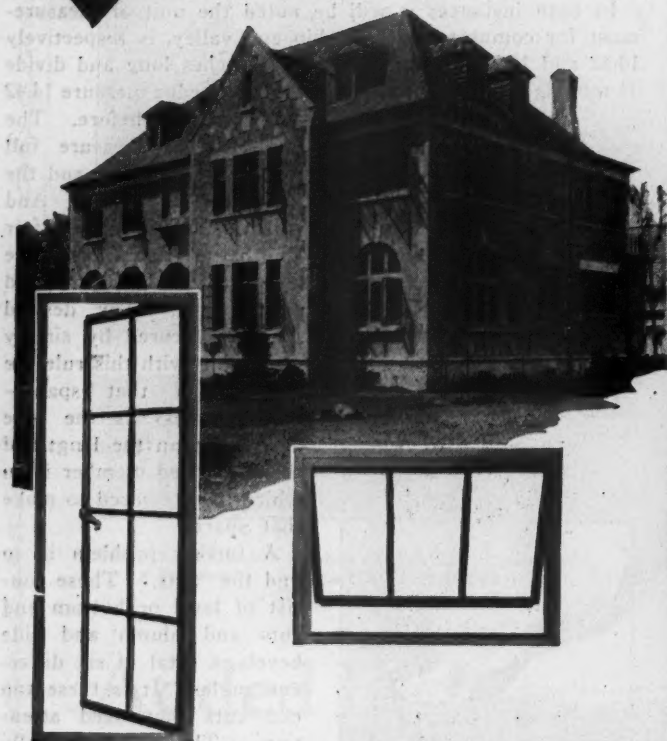
The New Tool For Marking Rafter Cuts in Use in the Hands of the Author. The blade, which is extended toward the carpenter here, can be swung to any desired position and clamped.

# TRUSCON STEEL COMPANY

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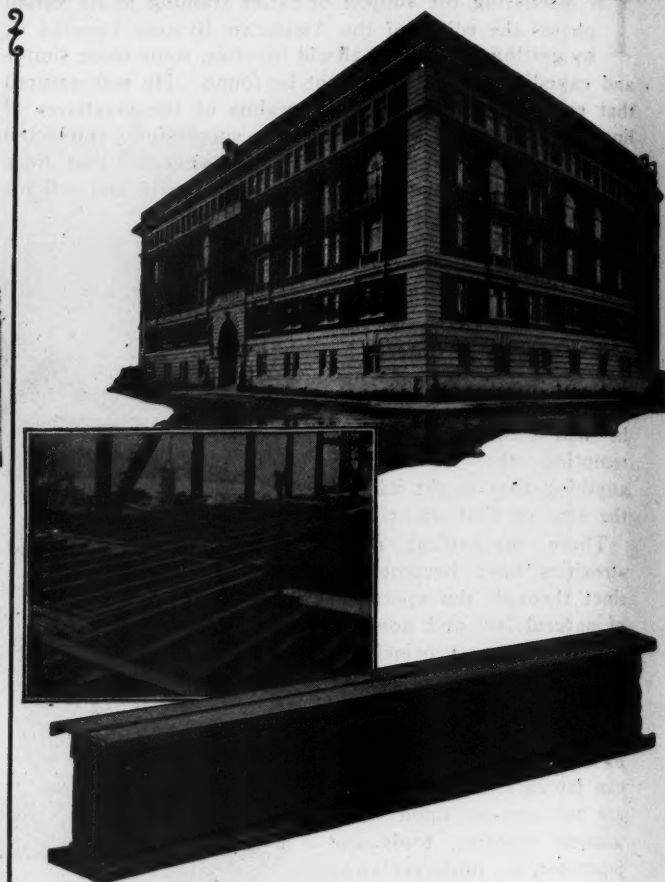


## Windows that Work With the Builder

Truscon Copper Steel Casement and Basement Windows save time and labor on your job. They eliminate cutting, fitting, and most of the other field work required for windows. Their high quality, attractive appearance and easy operation assure positive owner satisfaction.

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## Fireproof Construction At the Cost of Wood

Steel Joist floor construction will make you more money in your jobs on homes, schools, apartments, hotels, and the like. They meet the demand for fire safety and soundproofness, and they save you time and labor. You need no special equipment such as concreting operations require when you use Truscon Steel Joists. A Data Book on request.

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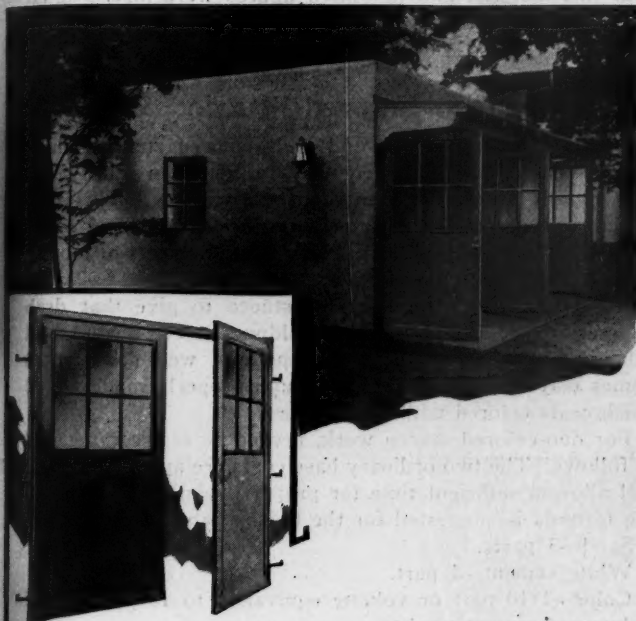
\*A complete line of Steel Buildings, Steel Windows, Metal Lath, Steel Joists, Steel Poles, Concrete Reinforcing for Buildings and Roads, Pressed Steel Specialties, Waterproofing & Technical Paints. Truscon maintains Engineering and Warehouse Organizations thruout the Country.



# TRUSCON STEEL COMPANY

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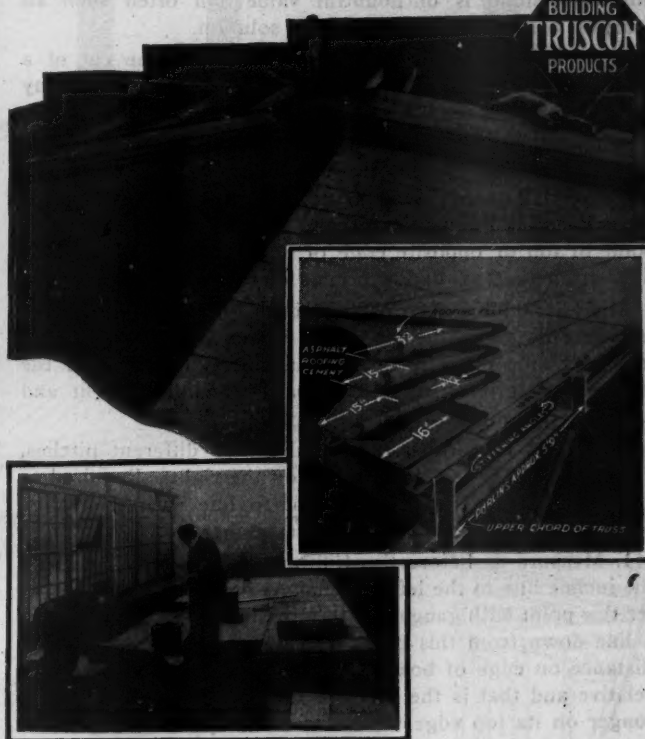


## Steel Doors for Added Safety

Let them know you for a quality builder. Put Truscon Firesafe Steel Doors in the basement, on garages, and at rear service openings in stores, apartments and other buildings. These Truscon Doors are durable, fine appearing and low in cost. Standard sizes meet every ordinary need.

## TRUSCON INDUSTRIAL STEEL DOORS

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## A Light Weight, Permanent Roof

For any building of straightaway design either flat, pitched or a slightly curved, use Truscon Ferrodeck and know that you will obtain perfect results. Ferrodeck consists of copper alloy steel plates with built up weathering of composition roofing. It is fire safe, permanent, light weight and lowest in cost. Ask for particulars and catalog.

**TRUSCON**  
*Ferrodeck*  
INSULATED & WATERPROOFED

"REGISTERED U. S. PATENT OFFICE."



## Simplified Roof Framing

(Continued from page 201.)

solution of certain cuts and bevels for boards on hips, hoppers or any sloping or inclined wall. A solution unaccompanied by an analysis that makes the principal of that solution understood is of doubtful value and often such an analysis is more difficult than the solution.

First, I shall show a process of "finding" the cut of a roof board at the hips, the same applies to valleys or any incline wall, and then I shall try to explain it.

A line drawn diagonally upon a board representing the pitch. Required to find the cut at hip: 1. Measure the width of this board. 2. Measure this distance on incline or pitch line. 3. Put a point there. 4. Square up from this point to top or opposite edge of board. 5. Draw the "cut line" from the two opposite ends of the first and last line.

Analysis: Here for instance is a 10-inch board tipped to where its perpendicular height is but 8 inches, therefore its upper side or edge must be as much longer than the lower as if it were an 8-inch board standing upright and abutting the specified slope.

Two lines are drawn representing two different pitches, the lesser on the left, the steeper on the right. Required to cut a roof board on the left roof to line with the valley formed at the intersection of these pitches.

1. Measure as before the width of this 10-inch board on the incline line to the left and make a point there. 2. Transfer this point with gauge line to pitch line on right. 3. Square a line down from this point to edge of board. 4. Measure distance on edge of board from this last line to its nearest relative and that is the distance this 10-inch board must be longer on its top edge to line with valley.

The solution appears to carry its own analysis right along with it. From this same line which indicates hip cut, for roof boards, side cuts of jacks and hip shingles may be taken with a bevel square if properly applied. The plumb and level cuts of common and jacks are calculated upon the distance of their runs and rises and have no additional complications in their level and plumb cuts because of their irregular intersections at their top ends, and what remains of problems in the framing of this roof of unequal pitches has had no recently improved solutions that I know of.



## Quick Work With Gypsum Concrete

(Continued from page 198.)

gypsum wallboard between the T-rails which form the sub-purlins, then laying a steel reinforcing fabric over the purlins, and pouring a mixture of structural gypsum and wood fibre over the reinforcement, and finally applying a surface of waterproofing material. The under-surface of the wallboard forms the ceiling, which can be decorated as desired. This roof-construction has been used extensively in numerous schools, colleges, theaters and industrial plants throughout the country, especially where it is desired to insulate the roof so as to prevent condensation of water on the ceiling. In this case, the total thickness of the gypsum roof-deck is 2½ inches, and the total surface covered exceeds 30,000 square feet.

Steel window sash and door frames were used. All the other interior trim and fixtures are of incombustible materials. Partitions were built, three and four inches thick, of the gypsum concrete. Pouring of the walls began May 24; erection of the roof started May 28, and, as has been noted, formal opening of the ballroom was on June 27.

Unique methods of decoration also were employed. On the walls of gypsum concrete the decorators took advantage of the form-marks, two feet square, which showed.

The square outlines were chiseled out to resemble cut stone. Bas-reliefs of Egyptian figures also were carved into the material. The background then was tinted with acid stain and the figures were outlined and colored with paint. Where the surface was gypsum wallboard, as on the ceiling and over beams and columns, it was covered with a plastic paint which gives both texture and color-tone in one coat. In some cases stencil designs were applied with this material and in others figures were inscribed on it and colored with ordinary paint.



## Duo-Colored Stucco

THE popularity of duo and multi-colored stucco, which has been used so extensively in Southern Florida, is now rapidly spreading throughout the country. This particular use of color has been carefully studied and made thoroughly practical by well known manufacturers of mortar colors and cement colors.

No longer is it necessary for stucco to give that drab impression of monotony and coldness. The "life" and "cheery atmosphere" desired in modern, well constructed homes may now be produced through properly manipulated finish coats colored with these colors.

For duo-colored stucco work, procedure is recommended as follows: The two ordinary base coats are applied as usual and allowed sufficient time for proper drying. The following formula is suggested for the finish coats:

Sand—3 parts.

White cement—1 part.

Color—1/10 part or volume equivalent to 10 per cent of volume of cement used.

Lime (optional)—1/10 part.

In order to secure most pleasing tones of buff or yellow, a light colored yellowish sand and a white cement are recommended.

The first colored coat should be applied approximately ⅝ inch thick, with a smooth or sand finish. The colors blue and green are proving quite popular for use as first colored coats.

The second colored coat may be applied almost immediately. It should be spatter-dashed with a whiskbroom, allowing the first colored coat to show here and there at varying intervals. Although the area of the second colored coat should be somewhat greater than the area of the first colored coat remaining visible, this exact proportion will depend upon individual taste, size of building, control of throwing spatter-dash and other physical characteristics.

The second colored coat should then be trowelled or floated; that is to say, the projections of spatter-dash are ordinarily trowelled down with a steel trowel held almost flat against the surface.

Although there is really an unlimited number of color combinations available in this type of stucco, a first colored coat of blue with a spatter-dash application of pompeian buff produces an effect in very good taste. A first colored coat of green also provides a base in conjunction with which many pleasing combinations may be worked out.



## Home Financing Problems

THE home-buyer's problem of financing above the first mortgage has been selected for special study during the coming year by the Mortgage and Finance Division of the National Association of Real Estate Boards. An investigation of the present status of the second mortgage and small loan is to be made by a committee appointed to study state legislation with the idea of encouraging uniform laws on securities where such legislation is found advisable. John L. Weaver, of Washington, D. C., is chairman.



## For Roofing Equipment

Horse Head Zinc is unexcelled as a material for roofing and roofing accessories. And it is not expensive.

Installations of Horse Head Zinc are permanent. They cannot rust. They will not leak, or stain the building they protect.

Standing Seam Horse Head Zinc Roofing is easy to lay. It is shipped in casks complete with nails, Zinc for clips, and full instructions.

Conductors and gutters made from Horse Head Zinc in all standard shapes and sizes are

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# Genasco



**—right over the old shingles!**

That's the message our two-page color advertisements in the Saturday Evening Post are carrying to more than ten million readers. And in line with this message to home owners is our message to you, Mr. Builder and Mr. Contractor, that you can get and handle this reroofing business

**—right in addition to your present business!**

Every building with a wood shingle roof in your community—every new building being planned—is a market for a strong, weather-tight, fire-resisting Genasco Roof.

Genasco Latite Shingles are moderate in cost—yet distinctive and attractive. They are made of tough long-fibred all-rag felt heavily saturated and then waterproofed with Trinidad Lake Asphalt Cement—a waterproofer found in no other shingle or roofing.

The "Genasco Way" of re-roofing—right over the old wood shingles—means steady business—all year around—without the time and trouble of ripping off the old roof.

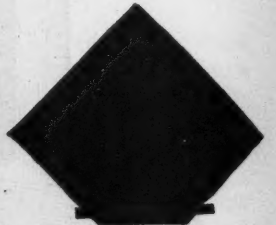
Write for details as to how you can get and handle this reroofing business.



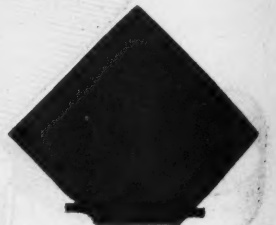
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**Genasco**  
Reg. U. S. Pat. Off.  
**Latite  
Shingles**

**They lock on  
the roof**



Genasco Latite Shingles have a patented "key" device—invisible on the completed roof—which clamps each shingle tightly to those underneath. This is the exclusive feature that makes Genasco Latite Shingles so well adapted for laying over old wood shingles.



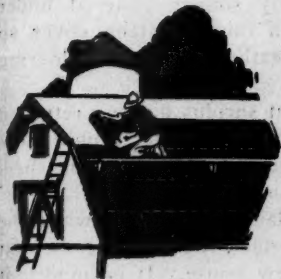
Back View of a Genasco Latite Shingle showing the "key" and how it is attached to each shingle. The turned-under corner of the shingle makes a double thick butt. This gives to the completed roof a texture which entirely dispels the flat, monotonous appearance of the ordinary roof.



Note that the metal "key" which locks each shingle tightly to those underneath is entirely invisible on the completed roof. Note also the shadows cast by the double-thick butts. Architects call this the "shadow-line"—a feature that adds beauty and distinction to a roof.



# protected!



## Genasco Roll Roofing

A high-quality, medium-priced roofing for buildings where a roofing less ornamental than Genasco Shingles is desired. Widely used on farm buildings, factories, train sheds, warehouses, lumber sheds and all places of storage. Made in two styles—smooth surface and slate surface. A supply of Kant-Leak Kleets packed in each roll.

Genasco Slat-Surface Roll Roofing is not only attractive but highly fire-resisting. It is supplied in three natural, unfading colors—red, green and blue-black.



## Genasco Roof Coatings

All smooth-surface roll roofings should be given an application of roof coating every two years to preserve their waterproofing quality and insure maximum life.

Genasco Roof Coating is a heavy black liquid asphalt which dries to a tough elastic coating. Shipped ready for use—in 1 and 5-gallon cans, and 50-gallon drums.

Genasco Asphalt Fibre Coating contains asbestos fibre, which permits a much heavier application without danger of flowing in hot weather. Furnished in 1 and 5-gallon cans and 30 and 50-gallon drums.

## Treasure dug from a lake!

Trinidad Lake Asphalt—dug from the surface of Trinidad Lake with mattocks—was first used a quarter century ago in the manufacture of prepared roofing. Today it is the foundation of the great line of Genasco Roll Roofings and Shingles.

Other products in the Genasco line follow. A complete list—also interesting booklets—gladly mailed on request.

Genasco Asphalt Putty  
(Roofing Cement)

Genasco Insulating  
Paper

Genasco Deadening  
Felt

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Genasco Wall Lining

## The Barber Asphalt Company

New York Chicago PHILADELPHIA St. Louis Kansas City  
Pittsburgh San Francisco

# Genasco

Reg. U. S. Pat. Off.

## Protective Products



## Genasco Stucco Base

A successful and economical base for the application of Portland Cement and Magnesite Stucco. It cannot sag or bulge—cannot rust or trap water—is windproof, waterproof, and verminproof. Made of high-grade felt thoroughly saturated and coated with asphalt into which granules of calcite are imbedded which act as the "key" or "anchor" for the stucco. Furnished in rolls 36 inches wide.



## Genasco Sealbac Shingles

For building owners who prefer the straight conventional type of shingle, we recommend Genasco Sealbac Shingles—individual or strip. They are made of the same high quality material as Genasco Latite Shingles—including the famous Genasco "Sealbac" feature. Genasco Sealbac Individual Shingles are supplied in three colors—red, green and blue-black. Genasco Sealbac Strip Shingles are furnished in red, green, blue-black and multi-color.

# Handling Oak Flooring

By W. L. CLAFFEY

**W**HEN oak flooring leaves the factory, it is stored in dry, well ventilated warehouses. It is shipped in box cars and ordinarily reaches the dealer in good condition. The proper handling of oak flooring while in the dealer's warehouse is important. It is not at all difficult to store oak flooring properly. Shed may be elaborately equipped, or simple in construction, but if you have taken care of the following, you should have no trouble.

First: Keep oak flooring in a clean, dry place. Flooring bins should not be exposed to the weather, as projecting ends will absorb moisture, and cause trouble in laying.

Second: Allow for free circulation of air. Do not stack too close to the ground; upper tiers are preferable, where there is less moisture and better air circulation.

At all times, handle carefully. In unloading from cars, as in making deliveries, oak flooring must be protected in bad weather. Handling expense can be considerably reduced by use of gravity conveyors in unloading onto trucks.

In stacking from cars containing mixed oak flooring it is very important to keep grades and sizes separate. Each bundle is rubber stamped at the mill, so this is not difficult to do. One bundle of lower grade delivered by error may spoil the general appearance of a high class floor, and cause dissatisfaction which could easily have been avoided.

Build out to the full length of the bin with shorter lengths, so that in filling orders each row is cleaned up

before starting another. This keeps the piles orderly and avoids danger of breakage. When making delivery, do not load wet lumber or any similar material under or on top of oak flooring, and if rain threatens, cover up well with tarpaulin. In all weather, carry the flooring directly into the building.

Caution your yard foreman that surplus flooring returned from a job should be in good condition, and should have the same average lengths as flooring originally furnished, if full credit is to be allowed.

Oak flooring should never be laid in a building while the walls and plaster are damp. In fact, it should be the last finishing material placed in a new house. It is important that brick, stonework, concrete or filling should be thoroughly dry before oak flooring is laid.

In winter building, residential or otherwise, oak flooring should never be laid without heating the rooms. There always is dampness in the air of a new building. This invariably leads to trouble, both in laying the floor and in its subsequent use.

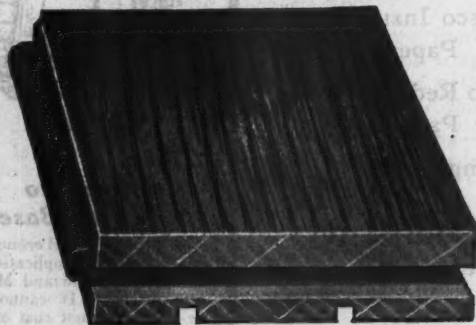
When three-eighth inch thick flooring is laid during the summer months, which usually are warm and dry, with the first fall chill and dampness, homes should be heated at least once a week. This is particularly true with thin flooring, as it is subject to a greater shrinkage on account of its light structure. Through prolonged wet spells, even in the summer, the room should be heated at least once a week.



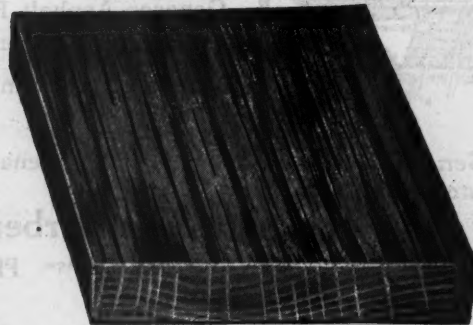
4" x 2 1/4" Face  
Oak Flooring—Actual End Size



3/4" x 2" Face  
Oak Flooring—Actual End Size



1/2" x 2" Face  
Oak Flooring—Actual End Size



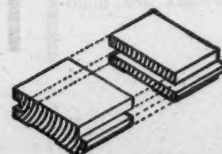
3/4" x 2" Face—Square-Edge  
Oak Flooring—Actual End Size



Laying an Oak Floor



"Blind Nailing" an Oak Floor



End "Tongue and Groove"





# Blue Print Plans and 24 Page Book "How to Read Blue Prints" Sent FREE

Our gift to every man in the building game. Sent absolutely free. For we want you to see for yourself... at our expense how easily and quickly you learn to read blue prints... and can get the knowledge that will make you more money. Don't send a penny. Just mail the coupon.

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We will send you also a book about the Chicago Technical School for Builders. It is free, too. It tells you all about our method of training by correspondence. It shows you how you can make your spare time pay you a handsome profit in a very short while. It tells all about our practical instructors... shows every branch and department of our Builder's Courses... gives you photographs of our men and departments... tells what others have done and what you can expect to do.

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## CHICAGO TECHNICAL SCHOOL FOR BUILDERS

Dept. 236, Chicago Tech. Building, 118 E. 26th St., Chicago, Ill.



Laying oak flooring is not difficult. Any first-class carpenter can do a good job, but some judgment and care are necessary to produce the best results. A sub-floor should be laid under thicknesses from thirteen-sixteenths to one-half inch. The sub-floor should be reasonably dry and laid diagonally. Shiplap six or eight inches wide is to be preferred. It should not be laid too tight and should be thoroughly dried and cleaned before being laid down.

It is well to use damp-proof paper between the sub-floor and the oak flooring. Do not use ordinary building paper or rosin-sized paper. The quantity required is small and only the best damp-proof paper should be used. Where sound-proof results are desired, a heavy deadening felt is recommended.

It is very important to leave about one-half inch space on all sides between the oak flooring and the baseboard to allow for any expansion in case any dampness creeps in. This opening is covered by the quarter-round base molding.

Oak flooring should be laid at right angles to the sub-floor in an old house. After laying and nailing three or four pieces, use a piece of hardwood two by four inches placed against the tongue and drive it up. Care should be taken in driving up three-eighth-inch flooring not to break the tongue, which is fragile; also not to drive up excessively tight.

The nailing of oak flooring is very important. All tongued and grooved oak flooring should be blind nailed. The best floor can be spoiled by the use of improper nails. We strongly recommend the following kind of nails:

For 13/16-inch thickness, 8d steel cut light flooring nail.

For 3/4-inch thickness, 4d bright wire casing nail.

For 1/2-inch thickness, 6d bright wire finishing nail.

For 5/16-inch S.E., No. 16, 1 1/4-inch barbed wire flooring brad.

The maximum distance between nails should be:

For 13/16-inch thickness ..... 16 inches

For 3/4-inch thickness ..... 8 inches

For 1/2-inch thickness ..... 12 inches

For 5/16-inch S.E., two nails every ..... 8 inches

Another excellent nail for oak flooring is the wire cement coated nail, whenever it can be obtained.

### Scraping Oak Floors

After the oak flooring is laid and thoroughly swept, it should be expertly scraped to insure a perfect polished surface. Scraping can be done by one of the many types of power sanding or hand scraping machines that are generally used by contractors and carpenters. Always scrape lengthwise of the wood and not across the grain. A floor after scraping should be thoroughly gone over with No. 1 1/2 sandpaper to obtain the best results in finishing. After this, the floor should again be swept clean and the dust removed with a soft cloth. It is then ready for the finish.

### Finishing Oak Floors

The finishing of an oak floor is a most important feature, involving cost, color and finish desired. Personal taste and artistic or decorative effect are the guide for the floor finisher.

The "Clear" grade of oak flooring should have a natural oak filler—color of oak. For the "Select" and "Sap Clear" grades a light golden oak filler should be used and after the floor is filled, it should be gone over with a little burnt umber mixed with turpentine to darken light streaks. This will make the "Select" and "Sap Clear" grades appear similar to the "Clear" grade, except that the color will be slightly darker. In filling the "No. 1 Common" grade, a dark golden oak filler should be employed, and the light streaks should be darkened in the same manner as the "Select" and "Sap Clear" grades. With a little care in finishing this grade, splendid results can be obtained.

First—Treat the floor with a paste filler of desired

tone, to fill up the pores and crevices. To thin the filler for application, one has a choice of using turpentine, benzine, wood alcohol or gasoline to get the right consistency. Never use a liquid filler. When the gloss has left the filler rub off with excelsior or cloth, rubbing against the grain of the wood. This will make a perfectly smooth and level surface. It keeps out dirt and forms a good foundation, which is the key-note of successful floors. Allow the filler twelve hours to set or dry. Then apply two coats of white shellac before applying the wax treatment. When varnish is to be used, give one coat of filler and one or two coats of varnish.

A wax or varnish finish may be used. The wax finish is preferred by many, due to economy and ease of renewing places that show wear. The renewing may be easily applied by anyone.

**Wax Finish**—The best method of applying the wax is to take cheesecloth and double it to get added thickness; then fold into a sort of bag. Put a handful of wax inside and go over the floor thoroughly. It will be found that the wax works through the meshes of the cheesecloth and gives an even coating over the floor. This prevents waste and excessive wax in spots. After the floor has been gone over with the wax and allowed to dry about twenty minutes, it is ready for polishing. Rub to a polish with a weighted floor brush, first across the grain of the wood, then with it. A clean, soft cloth may be used in place of the brush if desired. After polishing a piece of woolen felt or carpet should be placed under the brush to give the finishing gloss. After waiting an hour, a second coat of wax should be applied in the same way and rubbed to a polish.

**Varnish Finish**—This is usually more expensive than the wax finish, but it gives a very hard surface, which at the same time is elastic. One or two coats should be applied after the application of the paste filler. Any of the standard hardwood flooring varnishes will give good results.

**Floor Oil Finish**—When a high class finish is not desired an economical finish may be had by the use of light oil, made expressly for this purpose by many paint and varnish houses and oil makers; it serves as a filler as well as a finish, and is particularly recommended for oak flooring in public institutions, office buildings and stores. This oil keeps the dust from rising and preserves the floor.



## Essentials in Furnace Heating

(Continued from page 183.)

range pipe. This demonstrated the futility of connecting fireplaces, ranges or other heat utensils to the same flue to which the chimney is connected. Such additional smoke pipes act as a check to the surface draft. The range was given a separate flue and the trouble disappeared.

Another common error is the connection of the furnace smoke pipe too far or not far enough into the flue. The result of carrying the pipe too far in is shown in Fig. 5B. Interference set up in this way prevents the pipe from getting the full benefit of the draft, although this might otherwise be plenty strong enough. Smoke pipes should be short and as direct as possible. Where they enter the flue a thimble should be cemented on and the connection made air tight, as in Fig. 5C. Failure to carry the pipe in far enough is responsible for leakage at this point, as may be observed from Fig. 5A. This would best be avoided.

Good draft tests are the building of a smudge fire of wood, straw, paper or tar paper at the base of the flue. By placing a wet blanket over the top, leakage, if any, will be seen by tiny smoke streams at the cracks. Leaks are often into other flues, through walls or between wall and linings. Such tests should always be made in new buildings while the mason is still on hand, as repairs made later are expensive.



### The Italian Renaissance

Throughout the architecture of all nations are traces of decoration inspired during the Italian Renaissance. In plaster those fifteenth century masters wrought every beauty of form and color. Elaborate design characterized their cornice work, its amazing detail contrasting sharply with simple bare walls of rough texture.

On smooth plaster surfaces the paintings of Michelangelo and Leonardo da Vinci are preserved to this day



**G**ENUINE plastering and perfectly plastered surfaces make the homes you build easier to sell. Good plastering is a sales feature second to none.

For over a quarter of a century *Tiger Finish* has been famed for its uniform high quality, its purity, easy spreading and its ability to cover more square yards per sack.

For smooth surfaces, sand or antique textures, or stone-like effects, *Tiger Finish* is without equal.

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# TIGER FINISH WALLS

"SPREADS LIKE WARM BUTTER"



# Two Perfected Self-contained

## ARCO Tanks for Hot Water Supply

**H**ERE ARE two new products that will do much to make a home a better place to live in, and to increase its salability. Here are two Arco Tanks that give hot water in abundance at controlled temperatures, on instant notice and at lowest cost.

The first is a self-contained coal burn-

ing water heater and storage tank combined. The second is a gas burning water heater and storage tank which attains a new standard of operating efficiency and durability.

Both are made in six sizes to meet all requirements. For a few cents a day they give an abundant supply of hot water.

### *Installed upstairs or down*

Arco Tanks are so good-looking that they can be installed just as well in the kitchen as in the basement. They are clean and cool in operation and operate as inde-

pendent units or in conjunction with the coal range or heating boiler. This means a constant supply of hot water in the summer time without heating the home.

### *For coal or gas*

Arco Tanks are made in two styles—the coal burning Arco Tank and the gas burn-

ing Arco Tank. Both styles furnish hot water instantly and abundantly.

### *Completely equipped in range of sizes*

Gas Tanks 20-45 gals; Coal Tanks 30-100 gals.

All Arco Tanks for hot water supply are fully equipped with thermometers and automatic regulators. Each tank is

shipped ready for installation. There are no extra parts. Both coal and gas tanks are made in six different sizes.





# Water Heaters and Storage Tanks Combined



## Efficient—Economical—Durable

**F**OR a few cents a day Arco Tanks for hot water supply will furnish all the hot water necessary.

As hot water is drawn from the tank, cold water flows in and the automatic regulator speeds up the fire until the water is raised to the desired temperature. A tank full of hot water is thus always available for use.

Arco Tanks are built to last. Each

tank is tested under 200 lbs. hydrostatic pressure, and the  $\frac{1}{8}$ " cold rolled steel shells are galvanized on the inside and outside to insure a length of service far in excess of any ordinary tank.

The space between the shell of the tank and the exterior metal jacket is sealed tight, enclosing a layer of dead, non-circulating air—one of the best heat insulators known.

## LOW PRICE

Arco Tanks are priced so low that everyone can afford them.

The sizes on the coal burning Arco Tanks range from 30 gallons to 100 gal-

lons and the prices from \$84.00 to \$222.00. On the gas burning tanks the sizes range from 20 gallons to 45 gallons and the prices from \$66.00 to \$111.00.

*Write or call on our Branch or your local heating contractor for details*

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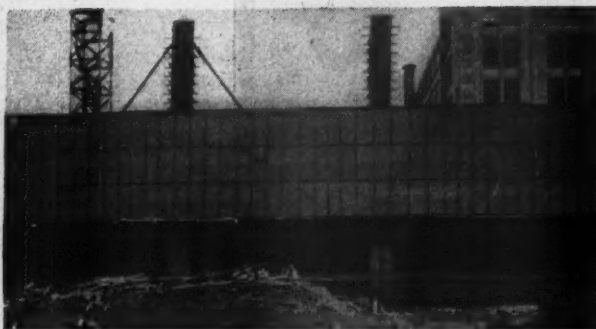
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# SISALKRAFT PROTECTION SISALKRAFT

Builders and Contractors everywhere are using **SISALKRAFT** the 6-ply **WATERPROOF REENFORCED BUILDING PAPER** as a protection during the course of construction. Its toughness, waterproof qualities and ease in handling make **SISALKRAFT** the ideal needed by the building industry.

The photographs shown below visualize the many uses of **SISALKRAFT** as a practical and economical **WATERPROOF REENFORCED BUILDING PAPER**.



**SISALKRAFT** used for temporary partition.



**SISALKRAFT** covering stock piles. Note that for this purpose two sheets of **SISALKRAFT** are sewed together. These were sewed on a regular machine for making automobile curtains.

The manufacture and sales of **SISALKRAFT** have tripled in the last six months. We thank our many customers who have made this possible.

We had generous response from our customers in reply to the December advertisement. Orders for carloads of **SISALKRAFT** are being received by telegraph and mail from our Dealers. We urge you to order your spring supply of **SISALKRAFT** at once!

If you are a Lumber or Building Material Dealer we wish especially to welcome you into our **SISALKRAFT** Circle. Write for our Dealer prices. They are attractive.

**American Reenforced Paper Co.,  
Attleboro, Mass.**

Gentlemen: Please send me Free sample of  
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Boston, Agents.

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Attleboro, Mass.**





This bird's-eye view shows the towns of Merchantville, Maple Shade, Lenola, and Moorestown, N. J., near Philadelphia, Pa. Two out of every three of these homes are roofed with Ruberoid Shingles—indicated in red.

## Two Out of Three Are Ruberoid

IN the suburbs of Philadelphia are the four towns of Merchantville, Maple Shade, Lenola, and Moorestown, N. J. They cover an area of five square miles and contain eighteen hundred homes. *Two out of every three* of these homes are roofed with Ruberoid Shingles.

This is a striking, but not unusual, demonstration of the fact that the quality, appearance, and prices of Ruberoid Shingles appeal strongly to home owners.

In Ruberoid Shingles and Roofings you find a wide variety from which to make selection—eight different styles of asphalt shingles surfaced with green, red, steel-blue or purple slate; and five different grades of smooth-surfaced and mineralized roll-roofings.

Near you is a lumber or building supply dealer who sells Ruberoid products. Ask him about them, or use the coupon below.

The RUBEROID Co.

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# RUBEROID

## SHINGLES ROOFING



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Gentlemen: Please send me information regarding the Ruberoid Products checked below.

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- ☐ Ruberoid Re-roofers
- ☐ Ruberoid Hex Strip-Shingles
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- ☐ Ruberoid Octab Strip-shingles
- ☐ Ruberoid Square-tab Strip-shingles
- ☐ Ruberoid Roll-roofing (Smooth)
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Name .....

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When you sell a building owner a "Penberthy" Automatic Cellar Drainer, you are providing him with the most perfect protection against seepage and other surplus water that the market affords. Made entirely of brass and bronze, the "Penberthy" does not deteriorate from use or idleness and automatically starts to operate as soon as the float is raised. Full details gladly furnished.

*Order From Your Jobber*

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Established 1866

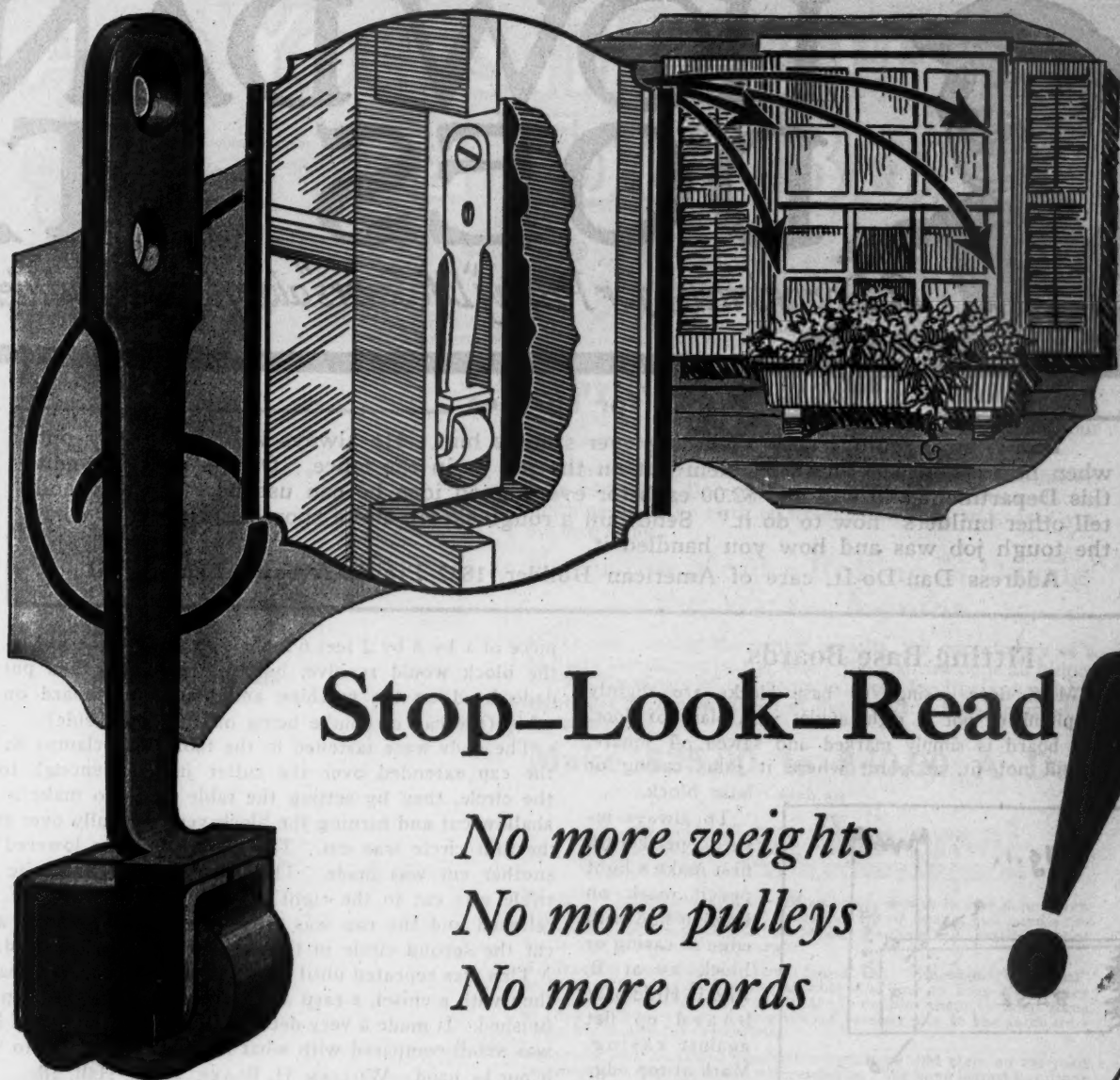
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*No more weights  
No more pulleys  
No more cords*

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can be used on sash not exceeding 18 lbs.

**STRONG—COMPACT—EASILY OPERATED—COSTS ONLY TWO-THIRDS THAT OF WEIGHTS AND CORDS—COSTS ONLY HALF AS MUCH FOR APPLICATION—REQUIRES ONLY HALF THE LABOR—AUTOMATICALLY SUSTAINS THE SASH IN ANY POSITION.**

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*Ask your mills for plank frames with sash mortised for AUSTRAL SASH SUSTAINERS and save time and money.*

**AUSTRAL WINDOW CO.**

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WINDOW CO.  
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Please send me a sample set of AUSTRAL SASH SUSTAINERS for which I am enclosing 50 cents (this covers actual production cost together with postage and handling).

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# HOW DAN DOES IT.

*A Department for Passing "Life Savers" along to other Builders.*

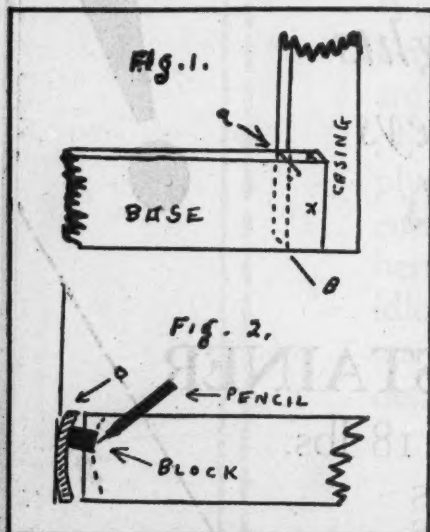
## \$2 for an Idea

Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is going to edit this Department and will pay \$2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it.

Address Dan-Do-It, care of American Builder, 1827 Prairie Avenue, Chicago, Ill.

### Fitting Base Boards

SOMETIMES door casings or base blocks are slightly out of plumb or not at right angles with plane of floor, and if base board is simply marked and sawed off square, the joint will not fit, at point where it joins casing or base block.



Where Door Casings or Base Boards Are Out of Plumb This Is the Way to Make Them Fit.

is inclined to warp badly as shown at O, Fig. 2. Often it cannot be made entirely straight by nailing. In such case, in fitting in corners, the adjoining piece will not fit if cut square. Use a small block of wood and pencil to scribe to shape of warped piece as shown in diagram, and saw as per dotted line.—E. J. WILSON, Gary Ind.

### When You Have No Lathe

SOMETIME ago I was called to replace a round and shaped cap under a porch column. As it was about 15 inches in diameter and there was no lathe available to turn it on, I worked it out on my power saw rig in the following manner:

First, I cut the circle from a 1½ inch board, bored a hole in the center of it, then fastened it with a ¼ inch bolt to a

piece of 1 by 8 by 3 feet 6 inches, tightening the nut so that the block would revolve, but not freely. I then put the dado head on the machine and placed the board on the table (the cap of course being on the upper side).

The ends were fastened to the table with clamps so that the cap extended over the cutter just far enough to cut the circle, then by setting the table so as to make a very shallow cut and turning the block very carefully over cutter the first circle was cut. The table was then lowered and another cut was made. This was repeated until the first circle was cut to the right depth. The clamps were then released and the cap was moved over the cutter so as to cut the second circle in the same manner as the first.

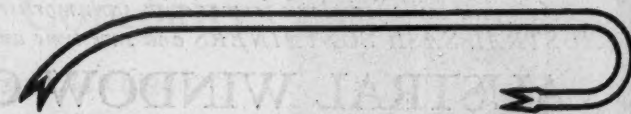
This was repeated until the cap had been roughly shaped; then with a chisel, a rasp and some sand paper the cap was finished. It made a very decent job and the amount of labor was small compared with what it would have been to work it out by hand.—WILLIAM H. BLAKE, White Hall, Ill.



### Another Studding Jimmy

I DO not think much of the "Studding Jimmy" illustrated in the September issue, as it surely would be inconvenient to carry around from job to job. I get the same results with an ordinary wrecking bar, which is an essential in every carpenter's tool kit. I took mine to the local blacksmith and had him shorten the crook until it grips 2-inch timbers perfectly. I use it not only on studding but also on joists or any 2-inch material that is warped.

I also use this tool for removing timbers that have been wrongly placed, as they can be more easily twisted out than hammered out, and with less damage to the timber. The change in no way lessens the utility of the wrecking bar and it can be carried in the tool kit. I also reversed the chisel end of the bar and had it slit for nail-pulling purposes. I find it very useful in places where I cannot use the ordinary bar or hammer.—MARK FESLER, Shirley, Ind.



A Studding Jimmy Said to Be More Convenient Than the One Offered Recently by Another Contributor to Dan's Department.



# Are You Still Carrying a Tool Box?

*And is it getting  
you anywhere*



## Why Not Lay Down the Tool Box

And get into something for yourself, where you can be your own boss and take all of the profits?

Become an "American Universal" floor surfacing contractor. The "American Universal" electrically driven floor surfacing machine does the work of six hand scrapers and earns you six men's pay.

## Keep the Money Rolling in During the Winter Months

Right now, during the winter months, the opportunity of a lifetime stares you in the face. Floor surfacing is all indoor work. Hundreds of old floors in every locality are waiting right now to be resurfaced at big profits to men equipped to do the work.

**Make \$25.00 to \$40.00 A Day**  
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## American Universal FLOOR SURFACING MACHINE

Every day in the year, winter and summer, month in and month out. You need no special training. Anyone, old or young, can handle the "American Universal" floor surfacing machine. A small amount starts you in business for yourself.

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Write or fill out the coupon today and ask for particulars and other valuable and interesting information which we will furnish without any obligation on your part what ever.

## The American Floor Surfacing Machine Co.

*Originators of Floor Sanding Machines*

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### Appoint Sales Director

THE Kent Machine Company, of Kent, Ohio, announces the appointment of Mr. F. C. McLaughlin as director of sales for the well-known Kent Red Lines concrete products machinery. Mr. McLaughlin has served the company for some time in the capacity of director for the special machinery division, and has also had charge of all purchasing. He is well known to many concrete men for his progressive methods and enthusiastic co-operation in bettering general conditions in the field.

### Cartwright Joins National Lumber Manufacturers' Staff

MR. FRANK P. CARTWRIGHT, for the past four years technical secretary of the Department of Commerce Building Code Committee, organized by Secretary Hoover to bring about more uniform economical building regulation throughout the country, is the most recent appointee to the headquarters staff of the National Lumber Manufacturers' Association, Washington, D. C. His work in some respects will continue the activities of Mr. D. F. Holtman, construction engineer, who recently resigned from the National Association to become assistant director of the Committee on Wood Utilization, functioning under the auspices of the Department of Commerce.



F. C. McLaughlin Whose Appointment as Director of Sales for the Red Line Concrete Products Has Been Announced by the Kent Machine Company, of Kent, Ohio.

### New Manning Company Branches

DURING the last three months, the Manning Abrasive Company of Troy, N. Y., have established new branch offices and warehouses at Grand Rapids, Mich.; High Point, N. C., and Buffalo, N. Y.



### Vicro Announces Stucco Dash

THE Vicro Corporation, 526 W. 18th St., Chicago, announces that it has perfected its manufacturing facilities and is now fully equipped with blast furnaces for the production of its stucco dash. It is prepared to furnish an absolutely uniform product in jet black, which, when mixed with white marble chips, or similar material, is admirably suited to producing the now popular smart stucco finishes. This dash is permanent in color, being unaffected by weather or other conditions and is produced under basic patents controlled by the company.



### Richards-Wilcox Convention

THE Richards-Wilcox Mfg. Co. states that its 1926 salesmen's convention was the most successful ever held by the company. It was attended by sixty sales representatives and branch managers from all parts of the United States and Canada. The convention began on Tuesday, January 5, and wound up with a big banquet on Friday evening, January 8. During the convention the salesmen gave their selling experiences and all the new items which have been brought out since the last convention were inspected and discussed.



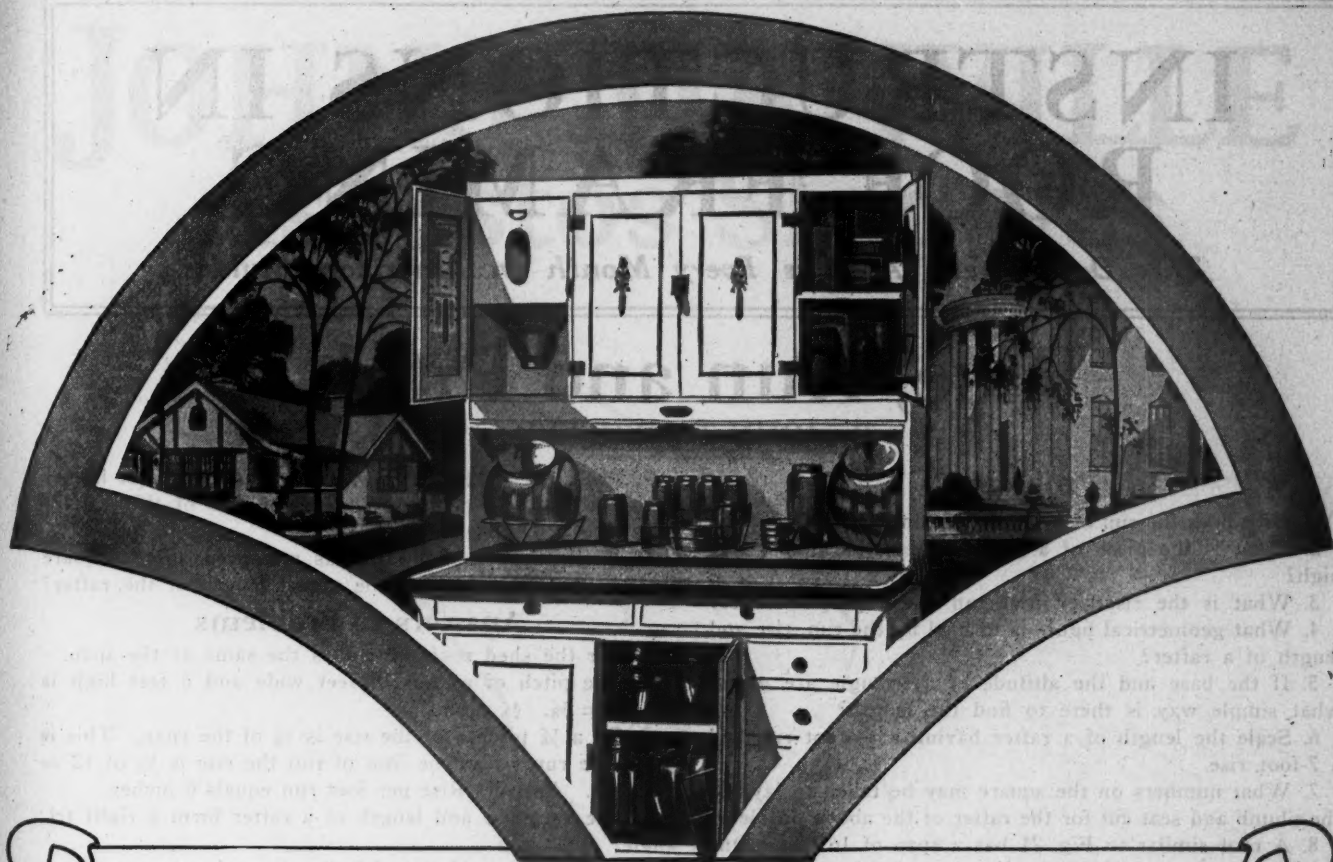
### A Mistake in Figures

ON page 133 of the January issue of American builder a typographical error was made in the article, entitled "The Basis of Business Success." It was stated that the Hartwick Lumber Company, of Detroit, Mich., employed an average of 35 persons throughout the year. The figures, which were obviously absurd, should have read 350 persons.



Sixty Salesmen and Branch Managers from All Parts of the United States and Canada Attended the 1926 Convention of the Richards-Wilcox Manufacturing Company, Aurora, Ill.





## Our new booklet is a guidepost to the planning of kitchens

In this advertisement, no merchandise is offered for sale. This page is the first of a series dedicated to the growth of an idea. It refers to a booklet prepared especially for architects, engineers and others engaged in planning homes.

As makers of kitchen cabinets, we stand four-square with a selected audience to the extent that we contribute directly to beauty, convenience and comfort within those magic walls that surround the hearthstone.

Many competent architects already hold the kitchen cabinet essential to the best engineering of the modern kitchen. As home equipment, it now takes rank with plumbing fixtures, electric lighting systems and unit heating plants.

Domestic science experts say that every kitchen floor plan should allot suitable space to a kitchen cabinet, because it adds greatly to the satisfaction of the home owner and especially gratifies the woman who will preside over the kitchen.

For the purpose it is designed to serve, a fine kitchen cabinet is more pleasing, more efficient and more economical than any form of fixed construction, to which it can be compared. And it is most sanitary. Never before was the demand for cabinets so great as it is today.

Our straightforward booklet setting forth the kitchen cabinet idea in relation to the work of architects and builders gladly sent on request. Write for it today. G. I. Sellers & Sons Company, Elwood, Indiana.



# SELLERS

KITCHEN CABINETS



# INSTRUCTIONS IN ROOF FRAMING

*This Department Appears Every Month in American Builder*

## Rise, Run and Pitch

By JOHN T. NEUFELD

### Problems

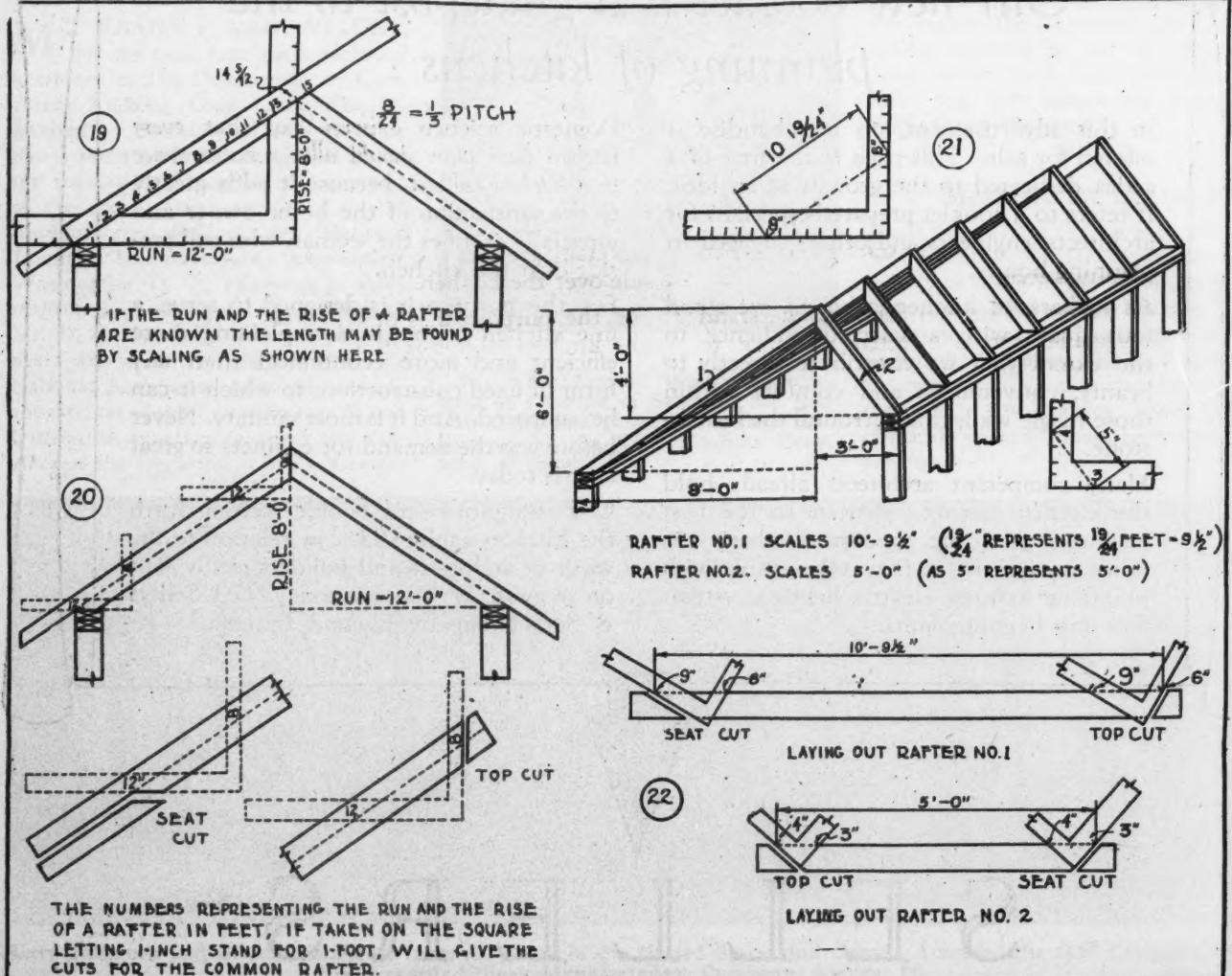
1. How does the run of a shed roof compare to the span?
2. What is the pitch of a roof 16 feet wide and 6 feet high?
3. What is the rise per foot run for a  $\frac{1}{4}$  pitch roof?
4. What geometrical figure is formed by the run, rise and length of a rafter?
5. If the base and the altitude of a triangle are given, what simple way is there to find the length?
6. Scale the length of a rafter having a 14-foot run and a 7-foot rise.
7. What numbers on the square may be taken to lay out the plumb and seat cut for the rafter of the above problem?
8. A roof similar to Fig. 21 has a span of 16 feet. One rafter has a run of 12 feet and a rise of 6 feet. What is the rise per foot run? The length?

9. The other rafter sets on a plate which is 2 feet higher than the opposite plate. What is the rise of this rafter? The length?

10. If the length of a rafter as measured on the square is  $16\frac{7}{12}$  inches, what is the actual length of the rafter?

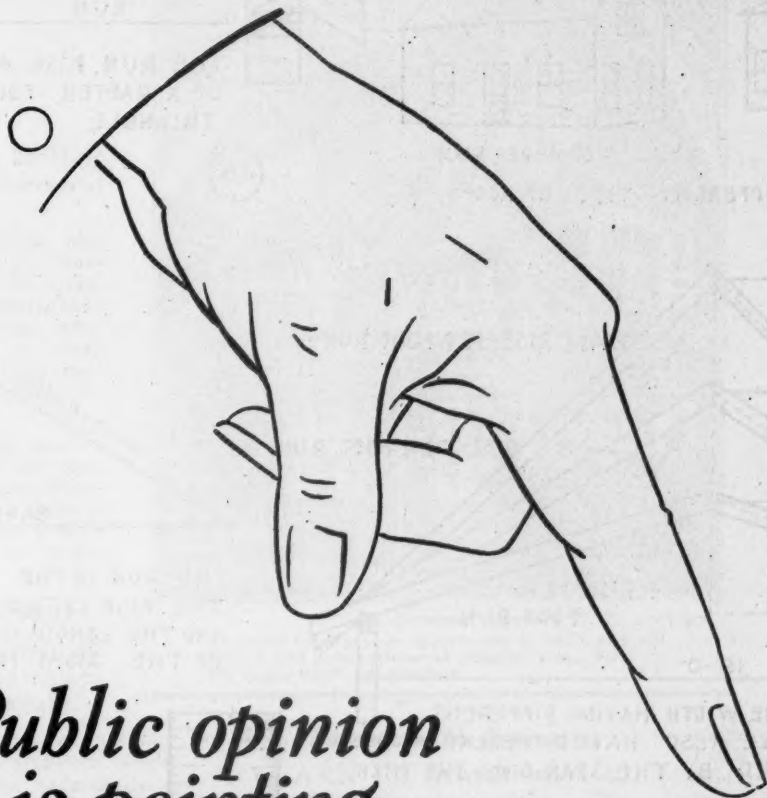
### Answers to Problems

1. For the shed roof the run is the same as the span.
2. The pitch of a roof 16 feet wide and 6 feet high is  $6 \div 16 = \frac{3}{8}$ .  $\frac{3}{8}$  pitch.
3. On a  $\frac{1}{4}$  pitch roof the rise is  $\frac{1}{4}$  of the span. This is  $\frac{1}{2}$  of the run. For one foot of run the rise is  $\frac{1}{2}$  of 12 = 6 inches. Answer: Rise per foot run equals 6 inches.
4. The run, rise and length of a rafter form a right triangle.
5. If the base and the altitude of a triangle are given, the length may be found to a fair degree of accuracy by



# JOHNS-MANVILLE

## Asbestos Shingles



*Public opinion  
is pointing  
—towards **FIRESAFE** roofs*

PEOPLE no longer buy a roof as casually as they used to. Greater and greater grows their demand for fire-safety and as it grows the use of asbestos shingles increases.

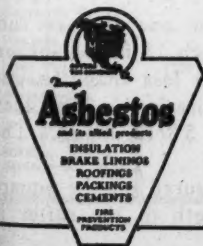
Dealers now find asbestos shingles easier than ever to sell, and the speculative builder has discovered them a big sales asset.

JOHNS-MANVILLE Inc.

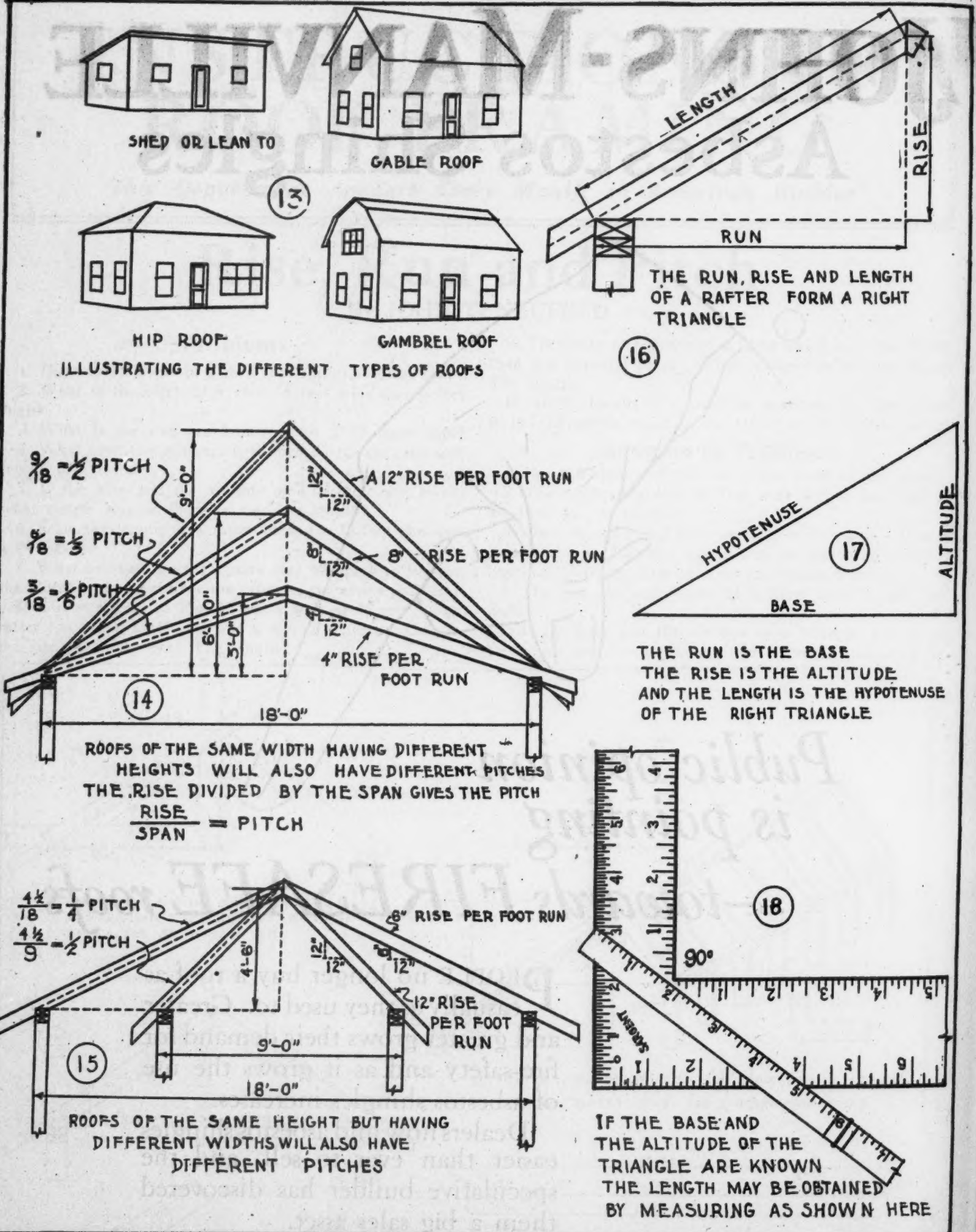
292 Madison Avenue, at 41st Street, New York City

Branches in 63 Large Cities

For Canada: CANADIAN JOHNS-MANVILLE CO., Ltd., Toronto







measuring across the square between the two numbers, representing the base and the altitude. These must be taken on the two arms of the square.

6. If we measure between the numbers 14 and 7 on the square we obtain approximately 158/12 inches. Therefore the length of the rafter is 15 feet 8 inches.

7. The numbers 14 and 7 on the square will give the seat and plumb cuts for this rafter.

8. The rafter in this problem has a 6-foot rise for 12 feet

of run. This makes a 6-inch rise for one foot of run. Answer: 6-inch rise per foot run; length 13 feet 5 inches.

9. The rise of this rafter is two feet less than the rise for the opposite rafter. Therefore the rise is  $6 - 2 = 4$  feet. The length measured on the square is 58/12 inches. The length of the rafter is 5 feet 8 inches.

10. If the length of a rafter as measured on the square is 167/12 inches, then the actual length of the rafter is 16 feet 7 inches.



# Lasting Beauty at Low Cost

## Sells the Home of Common Brick

**At last** home building America has discovered common brick.

Tens of thousands of new brick houses prove it. Mansions designed by the country's foremost architects; homes for the average man; whole communities of small houses built to sell, by conscientious realtors and builders.

Home-buyers are wearied with the waste of less permanent materials—are dissatisfied with transient beauty. In these facts lies today's great opportunity for you—the builder.

### 1: Burned-in Beauty

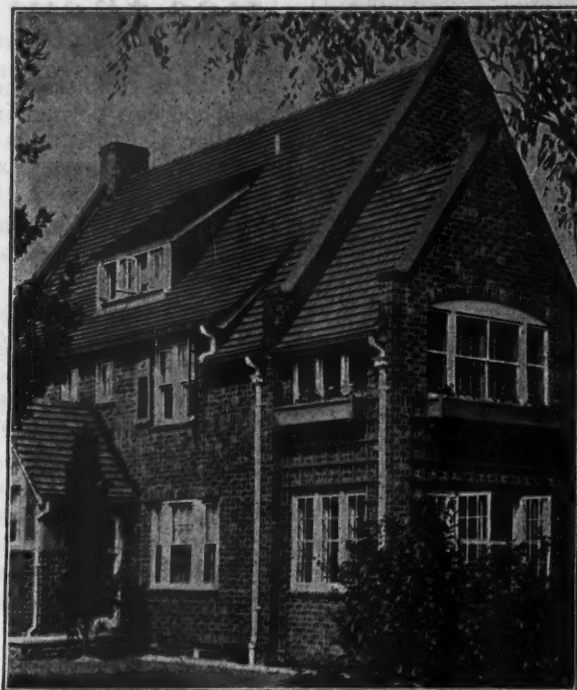
**W**ITH common brick you can build houses of outstanding beauty.

The burned-in beauty of common brick is approved by architect, builder and owner. It is an opportunity—a means of infinite variety in building really beautiful houses.

### 2: Beauty with Permanence

**E**VERYTHING decayable or burnable has been burned out of brick before it goes into the house. Permanence has been burned in.

That means elimination of repair—and freedom from the costly burden of upkeep. And that's what people want—these arguments will sell brick houses as fast as you can build them. Home buyers will gladly pay the slight extra cost of a brick house, if you advertise these qualities.



Grossinger Alterbury, N. Y., Architect

Common brick is your opportunity to build and sell beauty and permanence—at practical cost. Send for the books which tell you how.

### 3: Beauty with Economy

**L**EARN the newest ways to use common brick. The lowest cost solid masonry walls; hollow all-brick walls at lower cost than any other kind of hollow wall. Send for the free booklet "Hollow Walls of Brick." It tells you how to build hollow wall brick houses which look the same as solid brick—at a remarkable saving in cost.

We also help you save money by furnishing, at nominal cost, specifications and complete original working blueprints for any of the 136 common brick houses shown in the books listed below.

### 4: Beauty with Adaptability

**F**OR sound construction at low cost use common brick for footings, basement walls, partitions, fireplaces, chimneys—for the outside wall all the way through and all the way around.

Common brick can be laid in any bond or pattern. The rough surface of "skintled" common brickwork gives the antique finishes so popular now.

Where the architect or owner desires distinctive white walls, common brick may be inexpensively whitewashed. The

single coat need never be renewed—for it keeps improving in the desired appearance of age—and brick needs no protection.

### 5: Beauty with Highest Resale Value

**C**OMMON brick is the lowest cost building material in any city in America today. And a brick house lasts longer at lowest upkeep.

These facts, plus the growing desire for brick homes, gives the common brick house the highest resale value in proportion to both its first and total cost.

These common sense arguments for common brick are your opportunity to make easier sales at greater profit.

## THE COMMON BRICK MANUFACTURERS' ASSOCIATION OF AMERICA

### Where Brick Men Are at Your Service

Chicago	614 Chamber of Commerce Bldg.
Denver	1735 Stout St.
Detroit	400 U. S. Mortgage Trust Bldg.
Harford, Conn.	220 Pearl St.
Los Angeles	343 Douglas Bldg.
Newark, N. J.	1001 Firemen's Bldg.
New Orleans, La.	904 Carondelet Bldg.
New York City	1710 Grand Con. Term'l Bldg.
Norfolk, Va.	113 West Plume St.
Philadelphia	303 City Centre Bldg.
Portland, Ore.	306 Lewis Bldg.
Salt Lake City	301 Albee Bldg.
San Francisco	323 Mendocino Bldg.
Seattle, Wash.	913 Arctic Bldg.
Springfield, Mass.	351 Tarbell-Waters Bldg.

2131 Guarantee Title Building  
Cleveland, Ohio

BEAUTY and ECONOMY  
Burned in  
**Common  
BRICK**

### These Brick Books Tell You How

- "Hollow Walls of Brick"—FREE ☐
- "Your Next Home"—62 pictures and plans (10c) ☐
- "The Home You Can Afford"—58 homes (10c) ☐
- "Multiple Dwellings of Brick"—(10c) ☐
- "Skintled Brickwork"—(15c) ☐
- "Brick, How to Build and Estimate"—(25c) ☐
- "Farm Homes of Brick"—(5c) ☐
- "Brick Tiles"—(10c) ☐

Check above and send money or stamps for any or all of these books. Write plainly your name and address on the margin of this coupon.



## Rich walls of wood—and how to use them at a saving

Now the richness, the rare elegant grainings of Walls of Wood can be had in even the simpler homes and smaller apartments as well as clubrooms and hotels. The cost has been brought down within the reach of all who build.

The book, "Suggestions for Walls of Wood" contains page after page of detail drawings and helpful hints to builders.

It shows how Algoma, through standardized panels, has reduced the first cost of Walls of Wood to a reasonable figure.

It tells why the expense of installation is less than the city scale paid for lathing and plastering.

It explains why Walls of Wood, because of their permanence, keep maintenance costs down to a minimum. Walls of Wood increase resale and rental values of any property. They add to the beauty of clubs and hotels. Install them wherever you build.

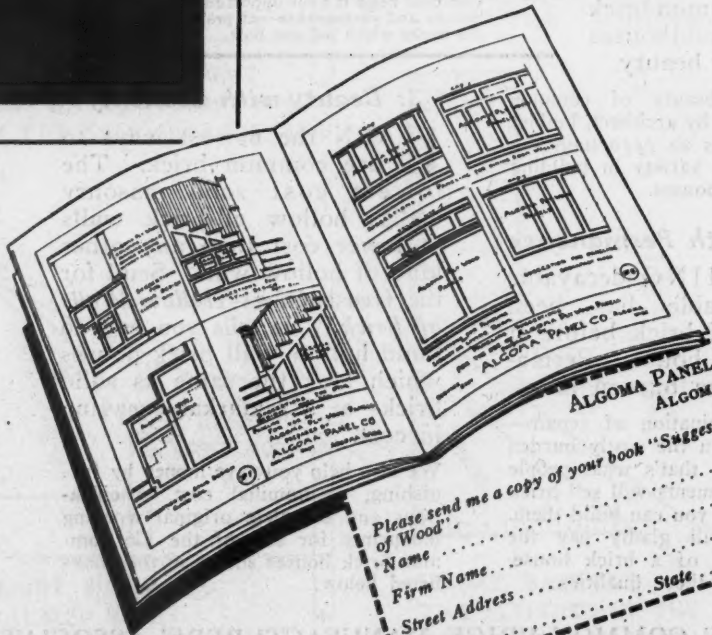
Send for "Suggestions for Walls of Wood"—it will prove useful to you.

ALGOMA PANEL COMPANY, Algoma, Wis.  
Stock Panel Warehouse: 1524 So. Western Ave., Chicago  
TELEPHONE CANAL 0485

### This valuable book tells you

How to attach panels to new or old walls.  
How to apply panels direct to brick walls.  
How to panel complete rooms.  
How to fit panels around windows and doors.  
How to build paneled ceilings of many attractive designs.  
How to panel stairways.  
How to get unusual effects with curved panels faced with the beauty of natural wood.  
And dozens of other helpful and interesting things you want to know.

Send for it today!



"Suggestions for Walls of Wood"—a practical free book for builders and architects. Send for it.

**Algoma**  
The Better PLYWOOD

Please send me a copy of your book "Suggestions for Walls of Wood".

Name .....

Firm Name .....

Street Address .....

City ..... State .....

ALGOMA PANEL COMPANY  
ALGOMA, WIS.



## Building regrets are too common!

When little or no attention is paid to the selection of building materials, the inevitable *must* be expected—a host of annoying and costly defects.

There is a sure way to play safe. Select materials with *care*. Insist upon products of *known* reputation. Avoid "buying in the dark." Test and compare before you buy.

Get samples of Beaver Products for walls, for roofs. Make your own tests—*severe tests*. Make comparisons. Prove positively that they build *walls* of permanent beauty and durability. See why they build *roofs* that stay sealed against the weather. Learn why experienced builders know the true economy of Beaver quality.

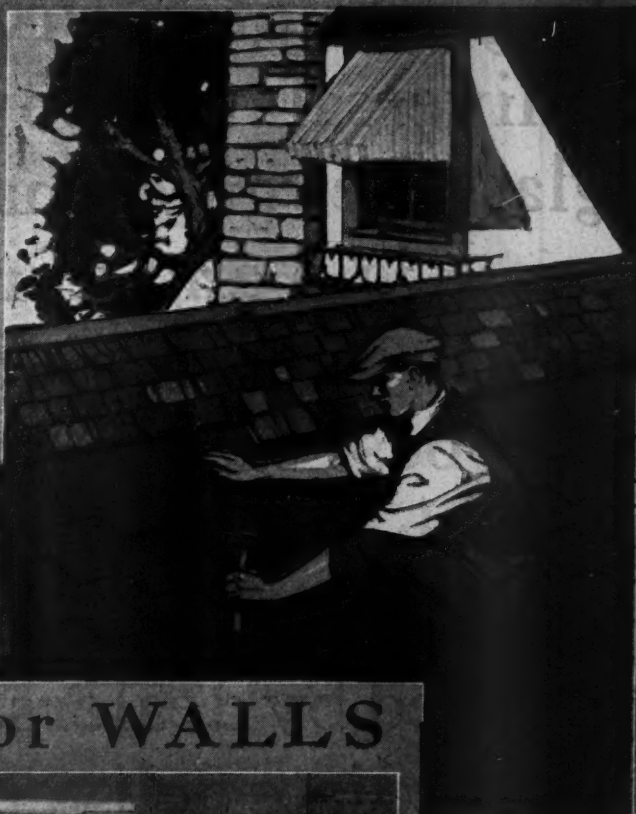
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Thorold, Ontario, Canada London, England

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SMOOTH, ROCK-LIKE WALLS ARE ASSURED WITH BEAVER BESTWALL,  
THE SUPERIOR PLASTER WALL BOARD

### for WALLS

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PRODUCTS

PLASTERS - WALL BOARDS - ROOFINGS

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This is the original hexagon slab shingle. It is an extra wide, durable, fire-safe roofing, made of the famous Vulcanite material. Bend and twist these tough, rigid slabs; see why they lie tight, smooth and flat. Test them

with hot coals, with water. Note how their design assures fast, accurate application and extra roof protection. They are supplied in many beautiful shades and blends. Send for sample and literature.



for business buildings, small or large, Lupton Pivoted Sash is the universal window . . . Its large glass area gives maximum daylight . . . Rigid and durable, good-looking and convenient, it is, of course, the best sash for any structure in which people work—25 stock sizes of Lupton Pivoted Steel Sash are carried by dealers everywhere, for immediate delivery . . . Easy to buy and easy to install . . . Write for Catalogue 12-A.

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2203 E. Allegheny Ave., Philadelphia  
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MIAMI, FLA.—Lupton Pivoted Sash are used in the modern Ungar Buick Garage, Pfeiffer and O'Reilly, Architects; George Jahn, Contractor.



# LUPTON PIVOTED SASH

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# At COMPLETE Last PRODUCTS Low as PLANTS as \$1100<sup>00</sup>

## 3 SIZES BLOCK PLANTS

(Daily Capacity Up to 2,400)

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At last a complete products plant has been developed that revolutionizes costs in the manufacture of finest concrete building units—a plant that may be purchased outright in its complete form or acquired piecemeal from profits earned. It manufactures concrete blocks, building tile, bricks and drain tile entirely unaided by hand labor, cutting manufacturing costs to the very bottom and producing units that obtain premium prices on the competitive market. It operates more rapidly than equipment costing from 50% to 75% more; and requires less men. As a builder and contractor you should know the facts regarding the quality and character of the products it turns out, as well as the money-making opportunity it offers you. The small investment now required is causing numerous contractors and builders to enter the concrete products field and thereby obtain much business that would otherwise be lost; besides making double profit on each job.

**"DOUBLE-PROFIT-MAKERS" Assure  
LOWER COST—BEST PRODUCT—  
PREMIUM SELLING PRICES**

**\$170<sup>00</sup>**

**Buys a Single Machine**

**"Double-  
Profit" Block Plant**

Our "Double-Profit-Maker" plant, though selling at unbelievably attractive prices, includes—2 sets of products machines; 2 power tampers; 2 power automatic adjustable volume feeders; power overhead shovel mixer; power conveying equipment; positive volume water control; all shafting and hangers; all pulleys; all belts; electric motor; industrial car sets; industrial transfer car sets—an absolutely complete plant in every case.

### Single Products Machines at Lower Prices!

Remember that "Double-Profit" plants convey aggregate and cement from below the floor level to the overhead mixer in a dry condition—do not need to be cleaned daily as other equipment. Remember that gravity in combination with power is used at every step to eliminate hand labor. There is no other equipment like it on the market—none that will make you so much profit—none that will produce such uniform high quality products necessary to establish your permanent success.

### GET THE FACTS! Catalog Information Includes—

illustrations and descriptions of every part of this equipment and gives full facts regarding products

costs, selling prices and profits; the existing and potential market; technical surveys; the experiences of our plant operators; all information regarding miscellaneous equipment, and a complete department of ornamental molds, pipe and tile manufacturing machinery, porch making outfits, fence post equipment, etc., etc.

Mail the Coupon to  
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☐ Send me your catalog on concrete products plants and single machines.

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**ALL SIZES  
VASE and  
FLOWER BOX  
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Makes \$983<sup>00</sup> Profit  
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Our ornamental mold catalog proves how you can make big profits in full or spare time, filling the demand for sun dials, bird baths, garden benches, flower boxes, vases, etc. This is the route taken by scores of men who have built big enterprises from a small beginning in the concrete industry.

**Send for  
Free Ornamental Mold Catalog**





## Special Unloading Equipment Prevents Delay and Damage

**A** MOTOR truck owned by a lumber and building material dealer is placed in a very difficult position. It must serve two masters. On the one hand it is the owner, who very carefully watches its cost record. It must operate economically; it must be "on the go" all the time and not waste any money doing it. On the other hand its customers, those to whom it delivers lumber, must be served quickly, efficiently and without expense to them.

The lumberman requires a chassis which is enduring, dependable and economical. Since the greatest expense connected with motor truck operation is maintenance and depreciation, it is essential that the chassis be built to stand

up and operate economically for a number of years.

The lumberman requires some type of body equipment which will automatically unload its load in a very short time in order that his truck may be kept "rolling." A truck is a decided liability while it is standing still. It is essential, therefore, that it be kept on the go just as much as possible.

The customer wants prompt delivery. He may seem unreasonable at times, but nevertheless, when he says he wants lumber delivered in two hours, he wants it.

Lumber must be placed on the job for the customer quickly and without requiring the aid of any of the customers help. The load must be laid down for him in per-



For the Satisfactory Handling of Lumber and Building Materials the Truck Body Should Receive Special Attention. Here is a body designed especially for the purpose which makes quick loading possible without damage to any of the materials in the load.

Rock Island Lumber & Mfg. Co. owns five such Internationals



## Everyday Opinion About International Harvester Trucks

**INTERNATIONALS first  
after years of  
truck experience:**

Rock Island, Ill., Nov. 12, 1925

International Harvester Company,  
Chicago, Illinois

Gentlemen:

Covering a period of about fifteen years in the use of trucks, of various well-known models and manufacture, will say that your product has given us the best service, based on tonnage delivery, of any trucks we have operated thus far.

On the basis of performance of the three trucks we purchased from you, we bought two more "Internationals" for "The White Yard," our yard at Davenport, Ia.

Want to make special mention of your inspection and service department. We find this a valuable aid in keeping these trucks in first-class condition at all times.

Yours very truly,

ROCK ISLAND LUMBER & MFG. CO.

A. B. Du Von, General Manager

**20 INTERNATIONALS  
in New York Subway  
construction:**

November 12, 1925

International Harvester Company,  
Long Island City, L. I.

Gentlemen:

We highly recommend the International Harvester Trucks. To date they have moved over 100,000 cubic yards of rock from a depth of thirty feet, coming out on a ramp with a 14% grade. We can say that we do not know of any better equipment for the use of contractors.

We can also say it is a pleasure to deal with a firm like the International Harvester Company. We have found them accommodating, giving wonderful service, and always ready to answer a hurry call when required.

Yours very truly,

ROSOFF SUBWAY CONSTRUCTION CO., Inc.  
S. R. Rosoff, President

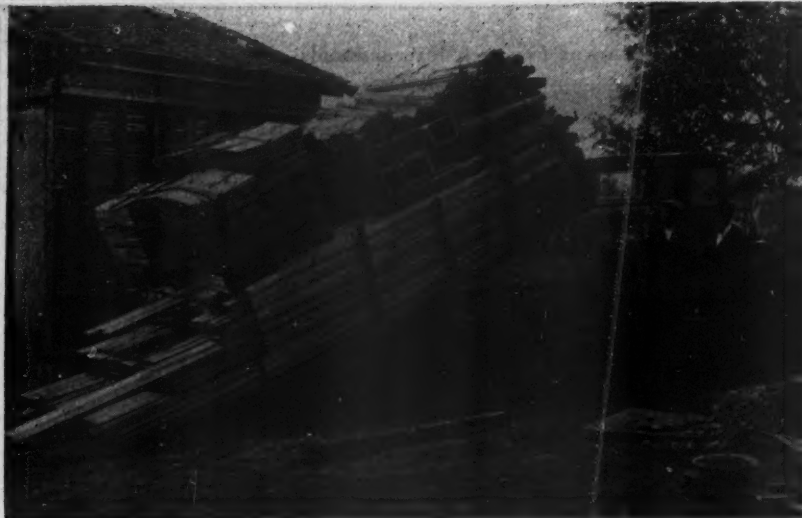
Write for  
information and  
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Internationals range from the Speed Truck (regular, speed dump, and special under-slung) up to 10,000-lb. Heavy-Duty Truck. As for Service, we have 112 Branch Houses, largest Company-owned truck service organization in the world.

INTERNATIONAL HARVESTER COMPANY  
606 S. Michigan Ave. of America Chicago, Illinois  
(Incorporated)







After This Special Truck Is Racked Into Place the Body Is Tipped Up Till the Ends of the Lumber Rest on the Ground at the Exact Spot Where It Is to Be Piled.

fect condition, which means that it must be either handled by hand or as carefully as though hand methods were used.

There are any number of motor truck chassis on the market which will quite adequately fill the needs of the lumberman so that the chassis is not nearly as big a problem as the body equipment. The lumberman is interested in getting his load delivered quickly. The customer, however, is interested in getting it unloaded carefully and without damage; so some special device must be used which will fill both of these requirements.

If speed were all the customer wanted, lumber and building supplies could be delivered like coal and gravel—dropped. The customer wants more, however; he insists that not a single piece of his material be marred or broken in the slightest degree.

One of the latest developments in lumber and building material unloading devices was designed as a result of a thorough study of



The Load Is Thus Placed Exactly Where Wanted, Without Expensive Handling and Without Wasting the Highly Valuable Time of Truck or Driver.



Then the Truck Is Moved Forward and the Load Gradually Slides Off the Slope of the Bed and Drops Into Place Without Damage.

these special requirements. This device unloads its load in less than a minute by carefully laying it on the ground. With this device, the customer is satisfied completely, for lumber and building material is not only delivered quickly and placed exactly where he wants it, but not a single piece is marred or broken. Material is handled just as carefully if not more carefully than if it were unloaded by hand.

The question of loading lumber also enters very materially if the truck is to be kept "rolling" continually, and if the customer is to be given the prompt service which he demands. A great many quick loading methods have been devised by lumbermen. This is a problem which must be dealt with individually and has been met in a most admirable way by lumber dealers. The building of a chassis and the unloading mechanism is a matter which the truck manufacturers must consider when building a truck to meet the requirements of a lumberman.

## United States Arbitration Law

ON January 1, 1926, the United States Arbitration Act, passed by the last Congress, became effective.

Under the provisions of the new law, any dispute which is subject to a civil action in court may be arbitrated instead of litigated. Labor disputes between employers and employees do not come within the scope of the act. A written agreement in a contract to submit any controversy arising under the contract to arbitrate is valid, irrevocable and enforceable in federal courts. Thus the authority of the courts is behind the private arbitration action, even though the court may never be called into action. If an arbitration agreement exists then the parties must arbitrate. When the arbitrator renders an award it must be accepted or the court will enforce it.

for Economical Transportation



# The World's *third* Largest Builder of Trucks

Twelve great factories! Manufacturing facilities and engineering equipment of a quality unsurpassed in the automobile industry! Two basic models with a wide variety of attractive bodies—selling at strikingly low prices! Durable, powerful chassis design especially developed to give reliable, economical haulage under all conditions in the construction business! Over 6,000 dealers and service stations stocked with parts ready to serve you promptly at low cost! The most economical time payment plan in existence! That's why Chevrolet ranks as the third largest builder of motor trucks in the world.

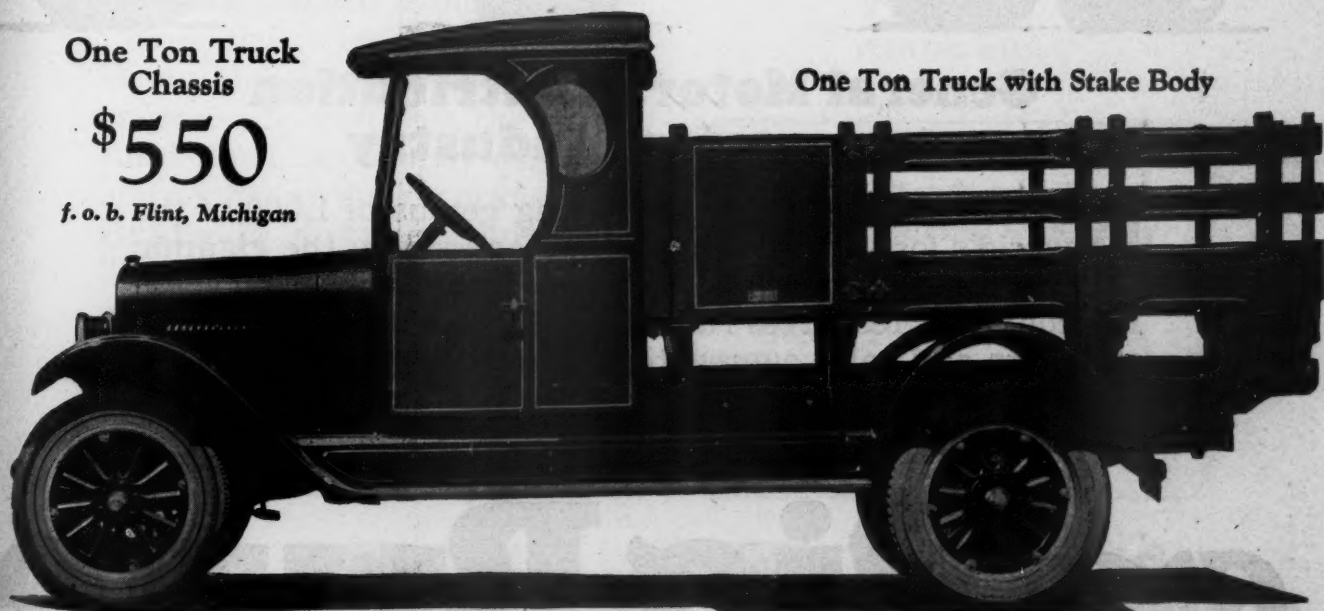
CHEVROLET MOTOR CO., DETROIT, MICH.  
Division of General Motors Corporation

One Ton Truck  
Chassis

\$550

f. o. b. Flint, Michigan

One Ton Truck with Stake Body



## QUALITY AT LOW COST

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



# A truck such as men



## General Motors Contribution to American Industry

**B**ORN of the combined engineering genius of 1,000 of the world's foremost engineers and fostered by the gigantic General Motors Corporation, with operations covering some 144 countries, resources running in the hundreds of millions of dollars and sales aggregating One Billion Dollars yearly, comes Big Brute—a *truck such as the industrial world has never seen before.*

# GMC Big Brute

# have never seen before

**B**RUTE in name, power, in size. Brute in terrific stamina and tremendous endurance. Big Brute is built to stand impregnable against the most brutal requirements of man and industry.

Beautiful in its brutal ugliness, Big Brute looks what it is . . . . a *Colossus among the Giants of modern transportation*. With the operating ease of a lithe passenger vehicle: a Fisher-Built Cab to furnish driver's comfort unknown before, and mechanical improvements years beyond the ordinary conception of today, it stands to change the industrial motor transportation of the world.

## A Truck Without "Bugs"

From its vast engineering experience, covering the production of over 4,849,485 passenger and commercial cars, during the last 25 years, General Motors Corporation has eliminated, in Big Brute, the vital weaknesses, the engineering mistakes, the structural flaws previously common among heavy duty trucks. **Big Brute is a truck without "bugs."** More than 71% of all motor vehicles made and sold by General Motors are now in active service.

The motor trucks of the entire world were studied by General

Motors engineers in developing Big Brute. It was learned why some trucks rendered but limited service. Why others surpassed them. Why some operated under nominal upkeep, while others were economic failures. One by one, these factors were met, analyzed and weighed. All mistakes of past years were corrected. *A new standard in heavy transportation thus was set.*

## Sold Under GMAC Plan

Big Brute, like all other products of the General Motors Corporation, is offered under the liberal General Motors Acceptance Corporation Plan of deferred payments—the lowest cost under which any motor car or truck can be financed on time payments.

GENERAL MOTORS TRUCK  
COMPANY  
PONTIAC, MICH.

### Products of

### Yellow Truck and Coach Manufacturing Company

*subsidiary of General Motors*

GMC Big Brute, 3½ and 5 ton trucks

GMC 1, 1½ and 2½ ton trucks

Yellow Cabs

Yellow Coaches

Yellow Light Delivery Trucks

Hertz Drive Yourself Cars

GMC 5 to 15 ton Tractors

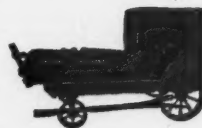
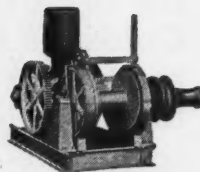
# GMC Big Brute



# LANSING

## Improved 7-S Mixer

With power side loader—Water Tank—  
Two cylinder radiator cooled  
LeRoy engine



THE new improved loading brake and clutch is easy to operate, has only one lever, is amply oversized and gives perfect control of the loaded skip. It consists of an integral internal expanding clutch and external contracting automobile type brake, alternately working on the same drum and controlled automatically by one lever with safety release when loading skip is at 50 degree discharge angle. Combining this with a rugged frame, low center of gravity, stiff axle construction, perfect mixing performance, compactness, parts amply oversized without excess weight, makes the Lansing 7-S Mixer most economical to operate.

Lansing-Company, Lansing, Michigan

Chicago

San Francisco

Boston

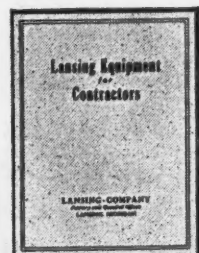
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# New Records and New Prices!

Graham Brothers Truck sales for 1925 were the largest in their history.

The previous record breaking year was surpassed by 123 per cent.

Such healthy increases in demand require proportionate increases in production.

Graham Brothers four factories are now equipped for larger output than ever before.

They are therefore able to give truck buyers the benefit of still further savings—

Savings that are now passed along in the form of another substantial price reduction—the third such reduction in eight months!

## NEW PRICES

1 Ton Chassis - - \$ 975

1½ Ton Chassis - - 1245

MBM Low Chassis - 1295

*f. o. b. Detroit*

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A DIVISION OF DODGE BROTHERS INC.  
GRAHAM BROTHERS (CANADA) LIMITED - TORONTO ONTARIO

# GRAHAM BROTHERS TRUCKS

SOLD BY DODGE BROTHERS  
DEALERS EVERYWHERE

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**\$6,000 in Four Months**  
"I have made \$6000 in four months on nine buildings."  
Wm. J. Petrusak, Chicago

**\$210 Per Month**  
"I am making \$210 per month as Architectural Draftsman. Thanks to Chicago Tech. College, St. Louis, Tenn."

### \$6,000,000,000 in Building—Train at Home for Big Money in This Fertile Field

Six Billion Dollars in one year! Think of it! Today Building is probably

America's greatest and most profitable industry. Here is a field whose future is insured by the normal growth in population and the industrial expansion of our country. There is a big building shortage now and many competent observers predict that our largest cities will be practically rebuilt in the next ten years due to ever higher standards of living. Six Billion Dollars spent each year in building means fortunes for thousands who have the vision to grasp the opportunity open now to get in on the ground floor.

### In Chicago Earn While You Learn



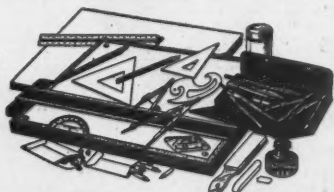
**Chicago Tech. Building**  
Short Day or Evening Courses offered in Building Construction and Drafting in our Chicago School. Part time positions defray living expenses. 72-page "Blue Book" tells all. Ask for it if interested in coming to Chicago to attend the College.

### Get Into Big Pay This Easy Way

Architectural or Building Draftsmen are needed everywhere. Get out of the low or moderate pay job. Step into a *real* job. You can do it with training in Architectural Drafting. Salaries are big because of the tremendous demand and the shortage of trained Building Draftsmen. Work is steady and you have a splendid chance to go into business for yourself. This is the opportunity offered to you by this old established school of Architecture and Building Construction. Step out of the \$40 a week class. Learn how to earn \$50 to \$100 a week—and later \$5,000 to \$10,000 a year as chief or superintendent.

### Train at Home—Earn as You Learn

No need to quit your present job. Keep your present income and prepare for a bigger one. Our simple "Practice Plan Method" will qualify you quickly in your spare time. In it has gone over 25 years of experience and the best knowledge of our large staff of architects and builders. It is simple, complete, resultful. Practical, successful builders guide you. Lessons in plain English. A common schooling is all you need. Get the facts now—today.



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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

### New Gypsum Industries Engineer

**M**R. HENRY J. SCHWEIM has been appointed chief engineer of The Gypsum Industries, 844 Rush Street, Chicago, Ill., to succeed the late Virgil G. Marani, who served the industry in that capacity for many years. These men were personal friends and for a long period were engineering associates.



**Henry J. Schweim, Who Has Been Appointed Chief Engineer of the Gypsum Industries.**

Mr. Schweim received his engineering education at Armour Institute of Technology. He was associated with Mundie & Jensen, architects, with the National Fireproofing Company as chief draftsman and with the United States Gypsum Company as sales engineer, supervisor of sales, testing engineer, and as district manager. During the war he was sent to New York to serve the Government in securing supplies of gypsum building products to act in engineering advisory capacities. Thus his technical training has been backed by a wealth of practical experience.

### Adopt Brand Name

**E**FFECTIVE January 1, the International Cement Corporation, 342 Madison Ave., New York City, will market the product of all of its domestic subsidiary companies under the brand name "Lone Star Cement." At the present time this name is used by International's two mills in Texas, the mill recently opened at Norfolk and the mills acquired last summer in Birmingham and Indianapolis. The adoption of a single brand name is dictated by a desire to have one name throughout the entire country to stand for manufacturing and marketing policies which are common to all International plants.

The International Bulletin also announces that the International mills now furnish with every shipment of Lone Star cement a certificate by the chief chemist of the plant certifying to the fact that the cement will meet or exceed all requirements of the U. S. Standard Specifications.

### Long-Bell Purchases Plant

**R**ECENTLY the Long-Bell Lumber Company, Kansas City, Mo., has purchased the plant of the Superior Oak Flooring Company, at Helena, Ark. With the acquisition of this property the Long-Bell company becomes the second largest manufacturer of oak flooring in the country.

The Superior plant was built about three years ago and is modern in every detail. Its product has won an established reputation and the same standard of manufacture and service which the Long-Bell company offers in its other operations will be maintained in the new plant.

### Roofing Company Moves

**F**OR many years the Beckman-Dawson Roofing Company has had its general offices at 111 Jackson Boulevard, Chicago, but on January 1 secured three times as much space at 223 Jackson Boulevard, where they have now located.



## JET BLACK Vicro Stucco Dash

A sparkling, black diamond studded stucco exterior finish of singular non-fading beauty is the result of Vicro Dash. Mixed with white marble chips this new stucco dash presents a contrasting effect which doubles the satisfaction and pride of the home owner. The brilliant stucco dash house is the latest and smartest style finish.

Stucco users have long sought a dash of this permanent brilliancy. Unlike other materials, Vicro will never collect a film or deteriorate in any way. Unaffected by time or weather.

Building supply dealers and stucco manufacturers are now ready to supply you.

For a uniform, reliable product insist on Vicro.

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Gentlemen:—Please send me samples, prices and full information concerning Vitreous Chromolithic Stucco Dash.

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Dealer	City .....
Cement Products Mfr.	State .....
Stucco Mfr.	
(Check One)	



### Prize House To Be Built

THERE have been several noteworthy architectural competitions conducted nationally for designs of homes during the past half-dozen years, but probably none more interesting and instructive than one just closed, held under the auspices of the Lehigh Portland Cement Company. In all 247 home plans were submitted and twenty-eight cash prizes totaling \$4,200.00 were awarded and the winners announced on January 31st.

But the competition was only a forerunner. Immediately—on February 1st—ground will be broken for the building of the prize-winning houses in Chicago, New York, Kansas City and Birmingham.

Under the competition rules the designs are for moderate cost, fire-safe, concrete masonry construction, with the use of concrete block on concrete tile and portland cement stucco surfacing.

It is expected that the Lehigh prize demonstration homes will be completed during April. Under the supervision of the Home Owners' Service Institute of New York City each house will be completely equipped electrically and otherwise furnished and decorated, and opened to the public for inspection over a period of four weeks. Cutouts in the masonry walls will

show the visitors exactly the method of concrete masonry construction and also the proper installation of plumbing, wiring, metal lath, plaster and other materials and equipment.

One of the purposes of this competition was to develop a keener consideration among architects for the concrete masonry type of construction that would produce an interesting series of well designed, economical homes as an inspiration to the American home builder. The Lehigh Portland Cement Company will produce a special architectural plan book containing the twenty-eight prize-winning and honorary mention designs which will be made available to the public.

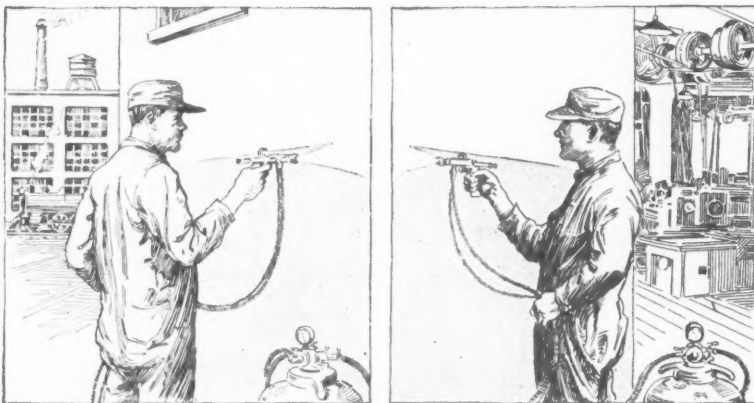


Five Members of the American Institute of Architects Judged the Plans Submitted in the Lehigh Portland Cement Company Competition. Angus McD. Sweeney, of San Francisco, was awarded the first prize of \$1,000. The judges, left to right: David Adler, Chicago; Aymar Embury, chairman, New York City; Charles G. Lering, Boston; H. T. Lindberg, New York City; D. West Barber, Knoxville.

### Elected Real Estate Executive

ELECTION to the vice-presidency of the Walsh, James & Wasey Company, one of Detroit's well established real estate firms, transferred the activities of Carl

Bradt from the industrial to the realty field. Mr. Bradt is a well known figure in Detroit sales circles, and is resigning the managership of the Detroit Steel Products Company's Merchandise Sales Department to assume an active part in the affairs of the Walsh, James & Wasey organization.



### Outside or In—

**You'll make more money painting the DeVilbiss way**

No matter what nor when you paint, painting with the DeVilbiss Spray-painting System speeds up your work 3 to 5 times. Hours of time are saved and more dollars of profit made.

Besides, improved work is done on every sprayed job and you have a more satisfied crew of painters.

Investigate this well established, greater profit DeVilbiss way of painting. Interesting facts will be gladly mailed. Address—

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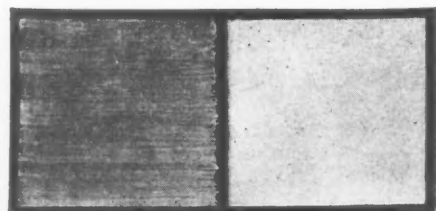
### Illustrating the Comparative Hiding Power of Brushed and Sprayed Coats of Paint

The hand brush puts on an uneven coating and the thin paint in the grooves wears away quickly. . . . The DeVilbiss Spray Gun applies a strong, even paint film that covers perfectly, that is durable and that wears down uniformly.

(Illustration shows same paint applied on identical surfaces — Photograph is unretouched and greatly reduced in size.)

One brushed coat

One sprayed coat





Bill, Wallbuilder Operator

# "Speed and profit!" that's the Wallbuilder

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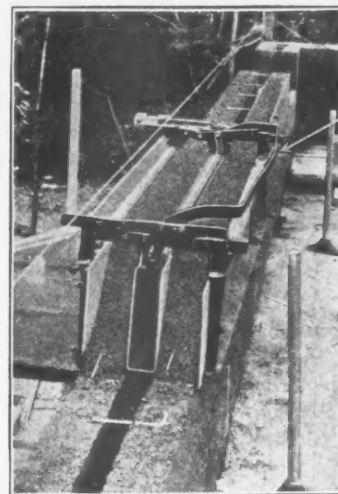
"This Van Guilder Wallbuilder is 'the goods'. Yes, Sir! and you don't have to go to college to use it. First off, I thought the concrete would have to set awhile. Well, it don't. Fill her up, tamp, then slide her along. That's speed. A foot a minute.

"When you've finished you've got a wall to brag about. Not one made of pieces of somethin' stuck together with somethin' but a real wall. Then, there's the air space.

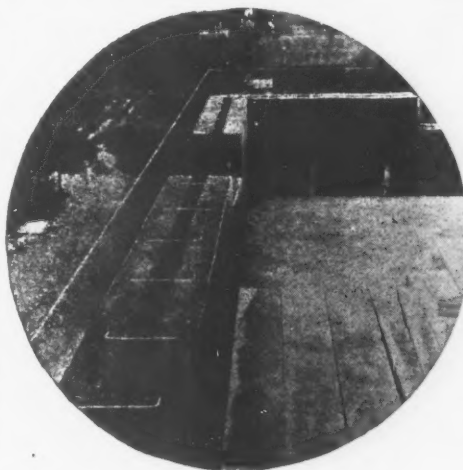
Say, that air space is like storm sash. Cool in summer; warm in winter. And dry all year round.

"Don't think you only use the Wallbuilder on concrete jobs. No. Whether they're taking bids on brick, tile or blocks, figure the Wallbuilder *against* those and get the job. On one job, there was sand in the cellar and the boss said our wall cost *beat* frame! What's more, the old air space lets you slap plaster right on the wall.

"No wonder the Boss is getting all the jobs. Take my advice and get the dope."



The Van Guilder Wallbuilder shown in place on walls is filled with semi-wet concrete and tamped. Lever indicated by arrow is then lifted which collapses the center core and expands the outside plates, thereby freeing the concrete on all sides. The Wallbuilder is then instantly slid forward. A foot of wall a minute. This is repeated around the building. By the time course is completed, concrete is stiff enough to support following course.



View of Wall. Note Air Space.

*Dealers! There still remain a few good territories. See if your locality is open. Write us.*

**Van Guilder System  
Concrete Building, Inc.**

15 East 40th Street,  
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Please tell me what the Van Guilder Wallbuilder can do for me. Local costs are—Cement .... per bbl.

Sand..... per cub. yd. Aggregate.....  
per cu. yd. Labor..... per hr.

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My business is.....

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### Books, Bulletins and Catalogs for You

**T**HE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

"Novo Power," published monthly by the Novo Engine Company, Lansing, Mich., contains, in the January issue, illustrations and descriptions of this company's new 3 to 6 horsepower, two cylinder engine.

The Upson Company, Lockport, N. Y., has just published a booklet under the title, "What Is Ahead, More or Less Building?" which contains a report of the Upson building survey No. 15.

The Portland Cement Association, 111 W. Washington St., Chicago, presents a folder telling, in pictures, the story of a Third of a Century of Progress in the Manufacture of Portland Cement.

"How Windows Can Make Better Homes" is the title of a booklet issued by David Lupton's Sons Co., Philadelphia, Pa. It is an attractive and interesting booklet illustrated in colors.

"The Ladder" is the new monthly publication of the Morgan Woodwork Organization, 2287 Blue Island Ave., Chicago, which will be "devoted to the upbuilding of dealers who want to climb." The first issue is dated January 15, 1926.

"Modern Modes in Better Plastering" is the title of an attractively prepared book published by the Milwaukee Corrugating Company, Milwaukee, Wis., which contains much valuable information on wall finishing.

"Universal Dealer," monthly publication of the Universal Portland Cement Co., 210 S. LaSalle St., Chicago, contains, in the January issue, an interesting and valuable article on "28 Day Concrete in 3 Days," and the data from this article is also offered in the form of a small folder.

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*Melvin Pratt Spalding, Architect*

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If the fireplace smokes when the new home owner passes his first winter, the Builder receives *all* the blame. The Builder's future depends upon the good-will of home owners. Insure this good-will by using a Covert Damper in all your fireplace construction.

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CLEANOUT DOORS  
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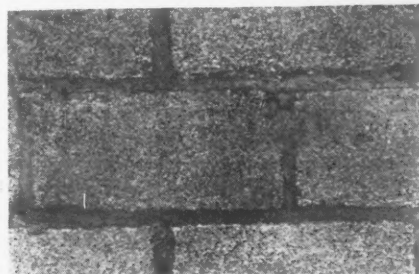
*Full information and prices  
upon request*

**COVERT**  
FIREPLACE FITTINGS

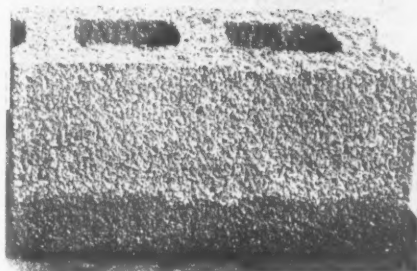
The H. W. COVERT COMPANY  
137 East 46th Street New York City



Seven men stood on this 8x8-ft. wall of 8-in. CINCRETE blocks without causing any signs of rupture. Yet the mortar joints between blocks were merely "battered" on the edges. This is one of many tests by the foremost authorities which have given conclusive proof of the superiority of CINCRETE. A CINCRETE building unit carries more than two-thirds of its unit strength into the wall.



A section of one of the CINCRETE block walls, licked by flames and deluged with icy water for over three hours, which were the only masonry uninjured in the big Tenafly, N. J., fire of December, 1924.



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The tests of time and accident are the best proof of some qualities. Such tests, in the last ten years, have proven CINCRETE, among other things, the most completely fire-proof of all masonry materials. Some qualities can only be satisfactorily determined by laboratory testing methods. The Underwriters' Laboratories, Columbia University, Watertown Arsenal, Johns Hopkins University, Pittsburgh Testing Laboratory, and other leading institutions have made all sorts of tests of CINCRETE, and we are glad to supply copies of test reports upon request.

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### Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to readers of the American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Structural Materials Research Laboratory, 1951 W. Madison St., Chicago, Ill., has issued its bulletin No. 16 under the title, "Effect of Size and Shape of Test Specimen on Compressive Strength of Concrete," which is a report reprinted from the proceedings of the American Society for Testing Materials.

"Novo Hoisting Handbook," published by the Novo Engine Company, Lansing, Mich., is an illustrated manual containing valuable information about hoists and hoisting work.

The Bostwick-Goodell Company, Norwalk, Ohio, offers two booklets on Fly Screens and Victoria Venetian Blinds which describe the products which it manufactures.

The American Cement Machine Co., Inc., Keokuk, Iowa, has prepared three bulletins. Bulletin T32 contains illustrated specifications of Boss heavy duty tilter, Bulletin B27 covers Boss heavy duty mixers and Bulletin 117 describes Boss hoists.

"Can a Carpenter Make Real Money?" is the title of a pamphlet published by the Master Woodworker Manufacturing Co., Bush and Congress Sts., Detroit, Mich., to illustrate the economy of its woodworking machines for window framing and similar work.

Better Homes in America, 1653 Pennsylvania Ave., Washington, D. C., has prepared a lecture on "School Cottages for Homemaking," illustrated with 40 lantern slides which can be rented for \$3, borrower to pay return transportation costs, or purchased for \$16.

The Morton Manufacturing Company, 5133 W. Lake St., Chicago, offers a new catalog, A3, illustrating and describing its line of Acme bath room cabinets and fixtures.

"Fireproof Homes of Period Design" is a most attractive plan book published by the United States Gypsum Company, 205 W. Monroe St., Chicago, containing 72 designs selected in a national architectural competition. Price \$1.

"Old Bridges of France," by William Emerson and George Gromort, published by The Press of The American Institute of Architects, 250 W. 57th St., New York City, is a portfolio of historical examples in black and white and in color. Price \$25.

The Richardson-Briggs Co., Cleveland, Ohio, has published a "Hand Book on Gas Ranges for Architects and Builders" which contains complete information on its ranges in an interesting and attractive form.

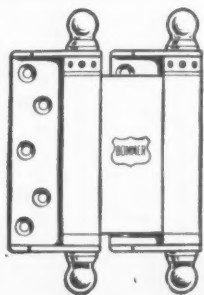
The Cortright Metal Roofing Co., 50 N. 23rd St., Philadelphia, Pa., offers a new booklet on its metal roofing under the title, "What is the Right Roof?"

The Bureau of Mines, U. S. Department of Commerce, Washington, D. C., has issued an announcement of the results of an investigation of methods of making satisfactory plastic magnesia with the purpose of aiding American producers to compete with the imported product.

The U. S. Department of Agriculture, Washington, D. C., has recently published the annual report of the work of the Forest Service for the fiscal year ending June 30, 1925.

L. F. Grammes & Sons, Inc., Allentown, Pa., has a new catalog covering its complete line of metal goods and containing a price list.

The Engineering Experiment Station, University of Illinois, Urbana, Ill., has made a re-issue of its Bulletin No. 67, "Reinforced Concrete Wall and Column Footings." Price 65 cents.



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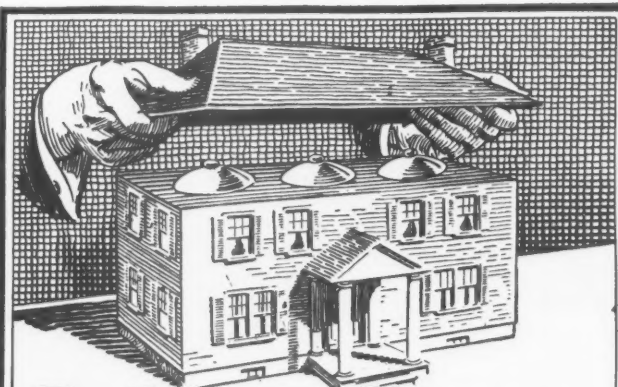
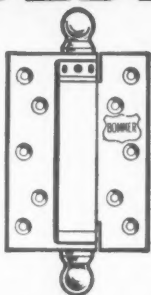
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Easily installed. We guarantee satisfaction. Carries doors of any thickness without blocking the track away from the building. Drop strap is on inside of door—adjustable type is adjusted from inside.

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